

# Croplife

WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

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Vol. 3

Subscription Rates:  
\$5 for 1 year, \$9 for 2 years

JUNE 11, 1956

Accepted as Controlled Circulation  
Publication at Minneapolis, Minn.

No. 24

## SDA Announces Details of Japanese Beetle Quarantine

WASHINGTON—Fresh fruits and vegetables from Japanese-beetle-infested sections of eastern coastal states from North Carolina to New York, and inland to West Virginia, will need federal-state quarantine certification from June 11 into September for shipment beyond the 15 states regulated by quarantine. Regulatory controls to prevent beetle spread—announced June 4 by the S. Department of Agriculture—will apply to railroad refrigerator cars, trucks and airplanes moving in all regulated areas.

Seasonal notices are issued each year regulating shipments of fresh produce during the period when harvest and the flight of adult beetles coincide to present a hazard of spread of the pest to uninfested areas.

## S. Fertilizer Set for Indonesian Delivery

WASHINGTON, D.C.—Small quantities of U.S. fertilizer materials were made available to Indonesia last week by the International Cooperation Administration. Value of the material was set at \$200,000.

This figure was broken down as follows: \$120,000 for nitrogenous fertilizer; \$65,000 for phosphate materials and \$15,000 for potash. The terminal delivery date was set September 30, and could start on the date of the ICA announcement June 6.

## Named Vice President

NEW YORK—Appointment of Kenneth D. Morrison as vice president of Philipp Brothers Chemicals, Inc., has been announced by S. Bendheim, president of the company. The appointment became effective April 12. Mr. Morrison will continue to serve as general manager of the firm's agricultural chemicals division.

## Spray Contract Awarded by USDA for Treatment of 180,000 Florida Acres to Control Mediterranean Fruit Fly

WASHINGTON—United Heckewelder Co., Richmond, Cal., was awarded a contract for the spraying of 180,000 acres in Florida for control of the Mediterranean fruit fly and around the Miami area. The S. Department of Agriculture reports the successful bid at 86¢ gal. Three applications of malathion will be made under the provisions of the contract, and a yeast compound, produced by USDA, will be used as oil, the announcement said. Soil applications of dieldrin or heptachlor will be made under all known host trees, to catch larvae attempting to go into the ground.

Last week Ervin L. Peterson, assistant secretary of agriculture, was in Miami making an on-the-ground

## Berry Survey Shows Growth in Fertilizer-Pesticide Mixtures

RICHMOND, VA.—Greater acceptance by state control officials of pesticide-fertilizer mixtures is indicated in the results of a questionnaire sent out by Rodney C. Berry, control official and state chemist of Virginia. The 1956 questionnaire is similar to previous ones through which Mr. Berry has obtained a cross-section of official opinion on the subject.

Just as last year's report (Croplife, Page 1, June 6, 1955) showed a considerable amount of growth over the previous year, so does the 1956 edition indicate that the idea of mixing fertilizers and pesticides for specific jobs, is well-grounded throughout the country.

Practically all of the reporting states indicate that mixtures are now sold within their borders. Significant-

ly, some of those which last year said "no" to this question, now indicate that mixtures are presently being sold. Those who changed from "no" to "yes" include Arkansas, Montana and New Jersey. Last year, six more states reported the sale of mixtures than had done so in 1954.

Here are the questions asked by Mr. Berry, and a tabulation of the replies received:

### Q.—Are fertilizer-pesticide mixtures sold in your state?

By far the great preponderance of state control officials indicate that fertilizer-pesticide mixtures are sold in their states. The only states indicating that such mixtures are not sold within their borders are Arizona, Massachusetts, Mississippi, New Mex-

ico, New York, Rhode Island, Texas and Utah. No reply was received from the states of Connecticut, Idaho, Missouri, Nevada and Wyoming.

Mississippi and New York both indicated that thus far they have had no requests for the sale of fertilizer-pesticide mixtures for food crops. If such a request were received, it will be referred to the proper authorities before being registered, these states note.

### Q.—Are these mixtures registered under your fertilizer law?

The same states that replied "yes" to the first question, also indicated the same answer for this query. Vermont indicated that fertilizer-pesticide mixtures are sold on a "custom mix" basis and that mixtures consist of registered fertilizer with registered pesticides added to order. Puerto Rico noted that the fertilizer carrier is registered, not the fertilizer-mixture as such a mixture.

### Q.—Do you collect the regular fee and tonnage tax under your fertilizer law?

All the states which answered affirmatively to the two above questions, also indicated the same answer to this query. Vermont, however, indicates that individual pesticides are registered.

### Q.—Do you have a law regulating pesticides?

In answering this question, there is some variation from the three previous questions. Delaware replied "no" as did Illinois, Nebraska, Ohio and West Virginia.

### Q.—Are these mixtures registered under your pesticide law?

Here again, most of the states indicated an affirmative answer to the question. Exceptions were Florida which answered "no," as did Illinois,

(Continued on page 21)

## Plant Food Institute Fertilizer Report Shows Slight Decrease in Tonnage, But Trend Toward Higher Analysis Materials

WASHINGTON—Fertilizer consumption in the U.S. during the calendar year 1955 was a near record, 20,416,410 tons, according to a study just completed by the National Plant Food Institute. This represents a decrease of 1.3% from the all-time record of 1954 when the revised estimate amounted to 20,679,026 tons.

Although the total tonnage in 1955 dipped slightly from the preceding year, indications are that consumption of actual plant food continued to increase.

In making this study, the Institute obtained, wherever possible, consumption figures for both fertilizer and plant food content. However, the lat-

ter figures were not available on a calendar year basis in a substantial number of states, but figures from states reporting both types data indicated an increase in the average plant food content of fertilizer.

In 1955, the average plant food content of a ton of fertilizer was 20.3%. Today, it averages almost 28%. This means that about 5,700,000 actual tons of plant food were applied to the nation's soils in 1955.

The consumption pattern in the Midwest shows a 2.4% decrease with the major part of the decrease occurring in the drouth area of the west north central states.

The south central region, suffering from poor weather conditions, showed a major decrease of 10.7% from 1954 figures.

The only significant increase was in the western states where 1955 figures were up 12.7% over 1954. Smaller increases in 1955 over 1954 occurred in the New England, middle Atlantic and South Atlantic states.

Fertilizer consumption in six states continued to exceed a million tons each and these account for more than a third of the total U.S. consumption

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RICHMOND, VA.—A special meeting of the stockholders of the Virginia-Carolina Chemical Corp. has been called for July 18 by Joseph A. Howell, president of V-C.

The purpose of the meeting, Mr. Howell states in notices sent to the stockholders, is to afford them "the opportunity to remove and replace any directors whose presence on the board they feel is not in the best interest of the company."

The call for the special meeting is regarded as the V-C management's move to counter a "straw ballot" planned by a minority group headed by Rupert T. Zickl which has been seeking control of the company. Management proxies are being solicited by officers and employees of the company under the supervision of a committee of board members. Georgeson and Company also will solicit such proxies.

(Continued on page 21)

## V-C Management Calls Special Meeting July 18

## Pacific Coast Borax, U.S. Potash Boards Agree on Merger

NEW YORK—James M. Gerstley, president of Pacific Coast Borax Co., the American affiliate of Borax (Holdings), Ltd. (formerly Borax Consolidated, Ltd., London, and Horace M. Albright, president of United States Potash Co., have announced that the boards of directors of their companies have approved an agreement of merger, subject to its terms and subject to the approval of stockholders.

The name of the merged company will be United States Borax & Chemical Corp.

The holders of the 725,000 shares of common stock in the United States Potash Co., exclusive of the Borax Group, will be offered 1 share of

4½% preferred stock of \$100 par value and 5 shares of common stock of United States Borax & Chemical Corp. in exchange for each five shares of United States Potash Co. common stock. If the proposed merger is approved by the stockholders of United States Potash Co., the potash shares owned by the Borax Group will be surrendered and canceled.

Upon consummation of merger, the capitalization of United States Borax & Chemical Corp. will consist of \$14,500,000 of 4½% preferred stock and 4,175,000 shares of common stock, of which 3,100,000 shares will be owned by the Borax Group. The \$14,500,000 of preferred stock and 725,000 shares of common stock will be owned by the present potash stockholders other than the Borax Group, and the remaining 350,000 shares of common stock will represent the holdings in America of the group of private investors headed by Lazard Frères & Co., New York.

It is expected that notices of spe-

cial meetings to be held late in June, to vote upon the proposed merger, will shortly be mailed to stockholders of United States Potash Company and of Pacific Coast Borax Co.

## Richmond C. Quorstrup, Barrett Division, Dies

NEW YORK—Richmond C. Quorstrup, assistant manager of the chemical sales department of Barrett Division, Allied Chemical & Dye Corp., died May 25 at Manhasset Medical Center, Manhasset, N.Y., after a long illness. He was 57 years old.

Mr. Quorstrup spent his entire business life with Barrett, starting as an office boy in 1917 after graduating from Richmond Hill High School. He worked subsequently in traffic and accounting, and came to the chemical sales department in February of 1922. In 1935 he was made assistant manager of chemical sales department, a position he held until illness forced his retirement.

## Spencer Sales, Earnings For Quarter Set Record

KANSAS CITY—Record sales earnings for the three months ended March 31 have been reported by Spencer Chemical Co., reflecting seasonally high demand for nitro products and an enlarged volume of polyethylene.

Net sales for the quarter amounted to \$15,084,791, compared with \$386,987 a year earlier, a gain of 2. Net earnings were \$2,370,829, up to \$1.97 a share on the common stock, after preferred dividends compared with \$2,043,352, or \$1.60 a share, a year earlier.

The increased availability of nitrogen products, combined with some drouth in some parts of the country has resulted in keen competition, a modest reduction in net reaction, Kenneth A. Spencer, president announced. He said that because the company's favorable plant locations and diversification of territories, the impact of these forces on its business has been reduced.

For the nine months ended March 31 the company's net earnings were \$3,976,741, equal to \$3.13 a common share, compared with \$3,610,300 or \$2.83 a share, a year earlier. Sales for the 9-month period aggregated \$32,574,001, up from \$26,588,131 a year ago.

Spencer announced the resignation of William H. Jackson as a director. Mr. Jackson, who first became a director in 1947, resigned to accept appointment as special assistant to President Eisenhower.

Directors have voted the quarterly dividends of 60¢ a share on the common and \$1.05 a share on 4.20% preferred, both payable June 1 to holders of record May 10.

## Vincent O'Leary Heads Memphis Section of ACS

MEMPHIS—Vincent O'Leary, McKesson and Robbins is the chairman of the Memphis section of the American Chemical Society, elected to succeed Dr. Samuel Clark of the University of Mississippi.

Other officers named during annual outing held here were Dr. Foster Moose of Southwestern College, chairman-elect; Donovan G. of Grace Chemical Co., secretary; Donnie Shelton of Firestone Tire & Rubber Co., treasurer; L. N. Ross of Buckeye Cellulose Corp., councilor; E. E. Hembree of Buckeye Cellulose Corp., alternate councilor, and Eldon Ruch of Firestone, member of executive committee.

Mr. O'Leary, member of the group since 1942, served as chairman during 1948-49.

## John E. Fletcher Named Sales Manager Of U.S. Potash Co.

NEW YORK—Appointment of John E. Fletcher as sales manager of United States Potash Co., effective June 1, has been announced by W. R. Gidney, vice president of the company.

Mr. Fletcher has been in the company's sales organization since 1947. He served as sales representative in the southeastern and midwestern territories before being appointed assistant sales manager Oct. 1, 1955.

A graduate of the University of Michigan, Mr. Fletcher served as a pilot in the air force during World War II.

### GROWING PROBLEM

COLLEGE PARK, MD.—John C. Grass is one of Maryland's most seriously growing weed problems, reports Dr. Paul W. Santelmann, University of Maryland extension weed specialist. He says "this noxious perennial weed has invaded all but two of the land counties, making some fields unfit for growing of crops."

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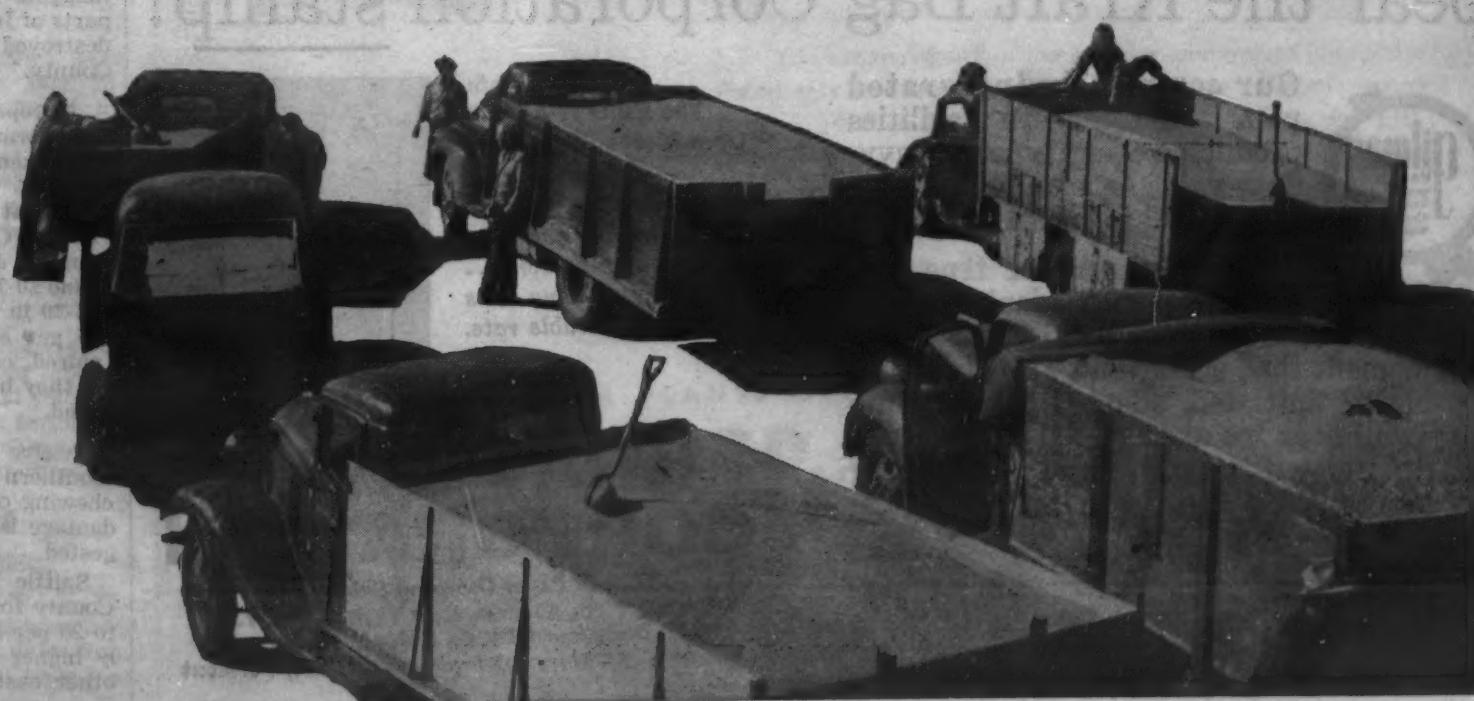
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## INSECT AND PLANT DISEASE NOTES

### Grasshoppers, Armyworms Active in Illinois

URBANA, ILL.—In central and southern Illinois, tiny grasshoppers can be found in fencerows. Hatch of overwintering eggs is not yet complete (June 1). Reports from southwestern, southeastern and central Illinois indicate that a few exceptionally rank fields of barley and wheat in some areas are infested with small to medium-sized armyworms.

In northeastern, eastern and central Illinois, adult chinch bugs are infesting small corn plants. Flea beetles are abundant on corn in the southern one half to two thirds of the state. Damage by bean leaf beetles became more noticeable.

Corn borer pupation is nearly com-

plete in the southern half of Illinois, and emergence is well under way. In the area north of Highway 36 and south of Highway 6, pupation ranges from 50 to 90% on June 1. In the area of Illinois north of Highway 6, pupation ranges from 12 to 50%.—H. B. Petty.

### Insect Activity Light in Missouri

COLUMBIA, MO.—In general insect damage to crops has not been especially severe during the week ending June 2. There are several insects causing some damage, but at the present time, there are no widespread outbreaks of any crop pests.

Pea aphids are the only insects which have damaged a crop in all sec-

tions of the state. Damage still continues in some fields, but the situation seems to be developing into an individual field situation.

During the week, pea aphid populations have been reduced tremendously in most sections of the state. Numbers continue high in some northern counties, but there is every reason to believe they will start dropping off very soon. In the southern and central sections, most fields are now nearly free of aphids. Occasionally, however, there will be a field that is still loaded.

There is no section of the state where spotted alfalfa aphid is a consistent and serious pest. It may start hurting again later in the season, but it is not causing trouble now.

Corn earworms are starting to work in the whorls of early corn in southern Missouri, and the sugarcane beetle is active on corn in southeastern counties.

Grasshoppers are hatching over entire state. Pine trees over the entire state are being defoliated by several species of pine sawflies.—Stirling Kyd and George W. Thomas.

### Unusual Pests in Willamette Valley

PORTLAND, ORE.—Two unusual pests are active in Willamette Valley crops. The tie worm has been tying up the terminal growth of vetch, flax, hops and trefoil fields. Entomologists also reported that saw larvae have been found for the first time in chewings in fescue fields in Marion County.

### Difference Between Wilt And Freeze Hard to Tell

NEW BRUNSWICK, N.J.—Freeze damage makes recognition of early stages of spotted wilt a somewhat difficult task. Growers in area where the disease was bad last year should pay particular attention to observing plants and should remove any which are even questionable.

In Gloucester County, Colorado potato beetle adults were present in potato plantings and egg masses were easily found. Also present were potato aphids in considerable number and populations were beginning to increase. (May 29)

In fields and in the vicinity of fields where spotted wilt was a serious problem in 1955, growers can expect thrips control and a subsequent lessening of spotted wilt incidence if control measures are applied promptly. Thrips are beginning to appear in tomato fields in considerable number and where adjacent fields contain chick weed, thrips may bring in the wilt virus.

Pea aphids are building up to a high level on peas in Cumberland and Cape May Counties. Many growers have already treated and others have held off for control.

Alfalfa weevil damage has been very severe. In all alfalfa fields in Burlington County and south, immediately after the first cutting is removed, applications of pesticides are indicated.—Leland G. Merrill, Jr. and Spencer H. Davis, Jr.

### Grasshoppers Prominent, Iowa Report Indicates

AMES, IOWA—Grasshoppers are doing well in spite of the recent rains. Hatching of differential grasshopper is well under way in south and central Iowa. (June 2) Check oats for very small grasshoppers. New seedlings are being eaten by 2 to 10 young hoppers per square yard. Unless control is applied now, the legumes may be killed before oats harvest. Soybeans are also being damaged by grasshoppers.

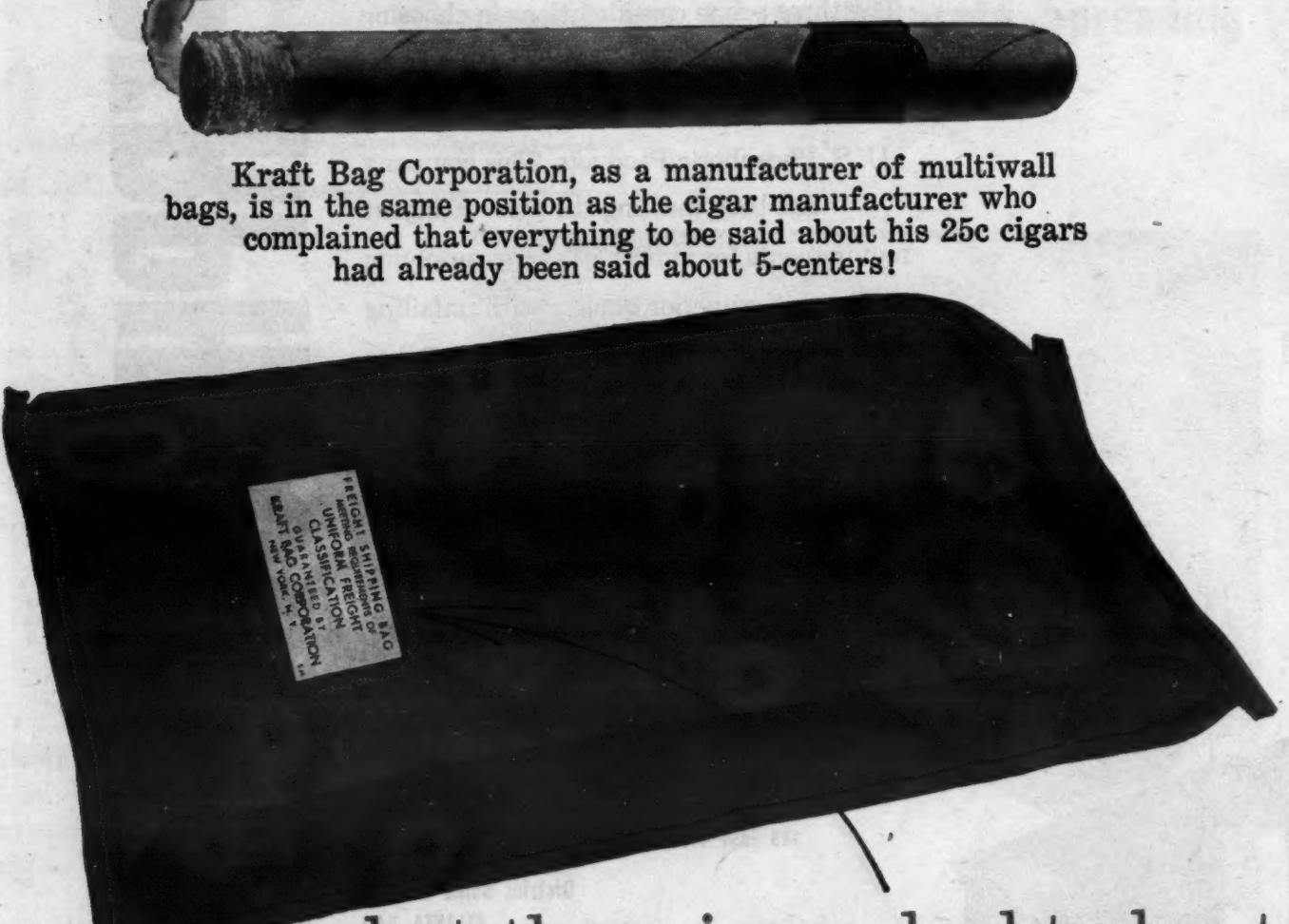
Soil insects are active. Wireworms, cutworms, white grubs, seed corn maggots are destroying corn in parts of Iowa. A field of soybeans was destroyed by glassy cutworm in Story County.

European corn borer is developing normally. First moths emerged at Ankeny May 28. At present there is 90% pupation and 2% emergence at Ankeny, 60% pupation in Boone County. First eggs should appear June 5-10 in south Iowa, June 10-15 in central Iowa and June 15-20 in North Iowa. Urge farmers to get equipment cleaned up, repaired, calibrated and ready to go if they have corn that looks pretty good.

Twelve-spotted cucumber beetle (southern corn rootworm) adults are chewing on corn leaves. Some of the damage is severe. No control is suggested.

Spittle bugs are present in Tama County for the first time, ranging to 20 per 100 stems of alfalfa. Slightly higher populations are present in other eastern Iowa counties. All

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Clover root weevils and alfalfa leaf spot are stunting alfalfa in Plymouth County. Surface applications of insecticide will have no effect on the larvae working on the roots.—Harold Gunderson.

### Different Insects Work in Delaware Crop Areas

NEWARK, DEL.—Severe damage is being done by the alfalfa weevil, and larval populations are at a peak. Asparagus beetle is destructive to untreated plantings, while the Mexican bean beetle (adults) are active on limas. (June 1)

The imported cabbageworm is generally common in Delaware and the European corn borer is laying eggs on sweet corn. Striped cucumber beetle is injuring both cucumbers and squash and pea aphids are reported to need controlling.

Eggs of both the Colorado potato beetle and European corn borer are reported to be hatching on potatoes. Potato aphid, flea beetles and black cutworms are prevalent on tomatoes.—L. A. Stearns and J. W. Heuberger.

### Dogwood Borer Reported in Connecticut

NEW HAVEN, CONN.—The dogwood borer, pest of flowering dogwood in Connecticut, is now entering the summer-long stage of egg-laying activity by adult moths. Ordinarily these moths are most abundant in late June and early July. The dogwood borer threatens trees planted within 300 feet of an existing infestation. Especially severe damage may occur when the bark of the trees has been injured.

### Curculio Pests Low in Population This Year

VINCENNES, IND.—No plum curculio have been found in four commercial peach orchards where 5 trees have been jarred periodically this season. Curculio adults, larvae and injury are prevalent in the unsprayed peach orchards in this area. In an abandoned orchard 20 adults were jarred from 5 trees on May 29 as compared to 39 on May 14, indicating that peak activity for first-brood was past. Commercial peach orchards in this area need no further protection for first-brood curculio.

Stink bug activity at present is extremely light. Peaches have outgrown the period when severe catfacing occurs. The value of additional sprays for catfacing is very questionable. Injury to date is light.

Flight of spring brood Oriental fruit moths, as determined by bait trap captures, was very light. Peak activity for these adults occurred between May 6 and 10. First-brood larval injuries to twigs are very light. Only a few have been found. All are now old injuries.

First codling moth entries were found at Vincennes on May 25. However, only 2 were found by three observers in a half-hour when working in an abandoned orchard that was 100% infested in 1955. Oviposition was heavy in cages May 21, 22, 26 and 27, and entries will likely increase during the next few days. To date, hatch is complete through May 20.

European red mite populations are again increasing. They were especially abundant at Fulton and Paducah, Kentucky on May 24. No serious infestations of *Tetranychus* spp. have been observed.—D. W. Hamilton.

### High Count Made of Grasshoppers in Kansas

MANHATTAN, KANSAS—The grasshopper hatch is about completed in most of Kansas at this date. Numerous nymphal populations have been

reported from many areas of the state. Populations of 15 to 30 per square yard were observed in fields of Douglas and Johnson counties of east central and in Riley and Pottawatomie counties, northeast. Dell Gates found counts as high as 200 to 300 nymphs per square yard in a few localized areas in Riley County. In general, counts were much less and ranged from 15 to 35 per square yard in other areas of the county.

Fully grown larvae of corn earworm were found in alfalfa fields in Marion County, central Kansas.

Leafhopper populations infesting alfalfa remain about the same in fields of central Kansas. Counts in Marion County range from 20 to 200 per sweep.

Infestations of lesser clover leaf weevils were found in red clover fields in Johnson, Leavenworth, and Jefferson counties. Counts ranged from 3 to 9 per sweep.

Numerous nymphs and adults of false chinch bugs have been report-

ed from home gardens and cropland areas. These should not be confused with the true chinch bug which is present in many small grain fields in the eastern half of the state.

Many small grain fields, barley and wheat, throughout the eastern half of the state contain numerous chinch bug nymphs and adults. Counts of adults range from 3 to 5 per linear foot of drill row, while nymphal counts range from 40 to highs of several hundred per foot.—Dave Matthew.

### Boll Weevils Scarce, Tennessee Reports

KNOXVILLE, TENN.—No sign of boll weevil has been found in the fields so far (June 3) this season although the spring hibernation count indicated that there was an average of 218 weevils per acre on April 5, 1956. These weevils are probably in the fields at this time feeding on the

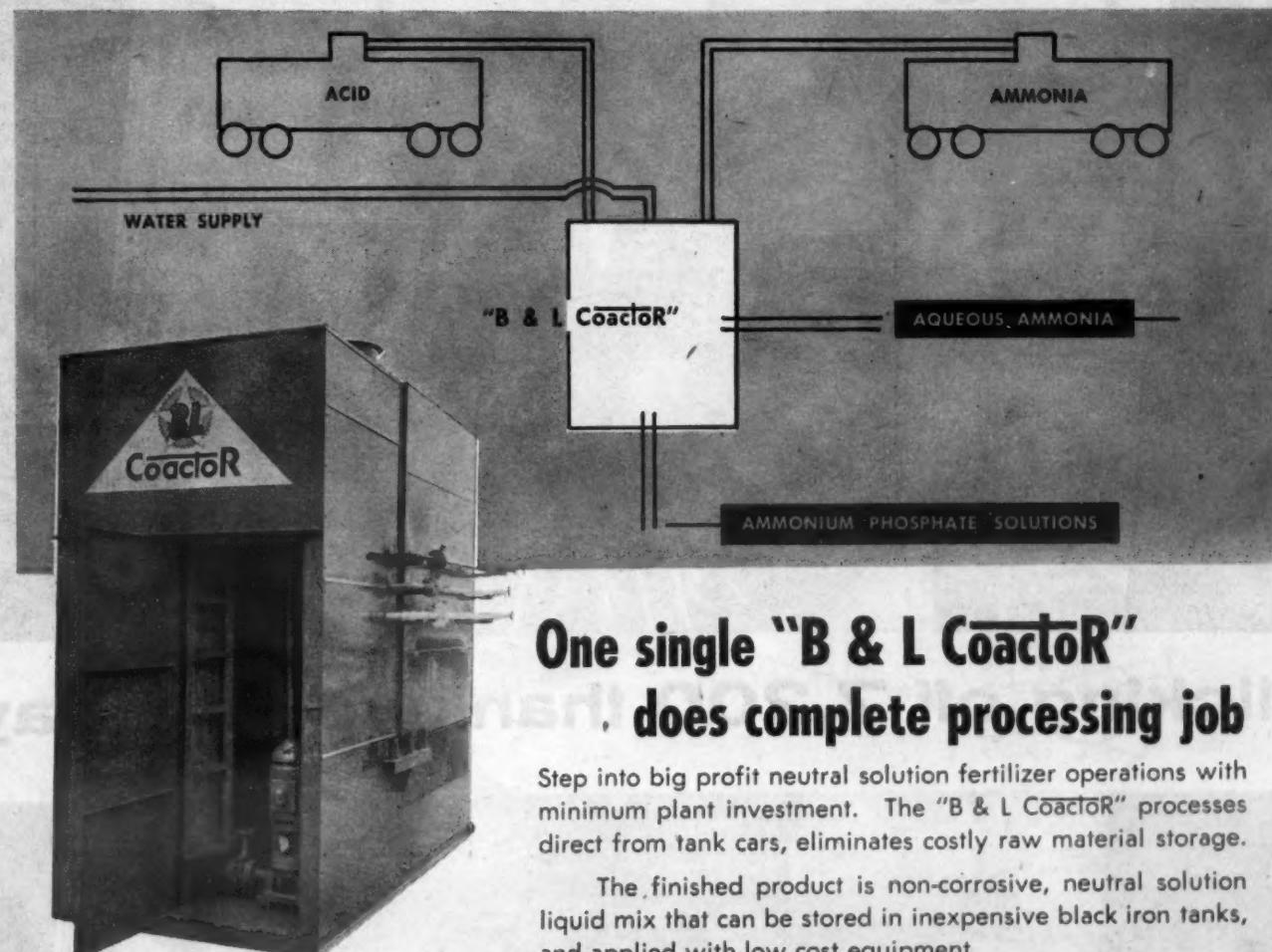
terminal growth but so far none have been found.

Thrips are migrating into cotton fields from other crops but for the most part from vetch fields. The infestations are higher than last week and in some of the older cotton control is needed. Infestations are building up and some damage can be expected all over the cotton growing area.

Aphids are scattered all over the area and are causing some damage. Most of the damage is being done by thrip and aphid combinations. No heavy populations of aphids have been found and no extreme heavy infestation of thrip but with the two working together some damage is occurring.

Flea beetles are slightly heavier than last week but damage is slight. The striped and black flea beetles are present in most fields but are few in number.—R. P. Mullett.

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## WORLD REPORT

By GEORGE E. SWARBRECK  
CropLife Canadian and Overseas Editor

### Icelandic Fertilizer

Iceland's nitrogen fertilizer plant with a rated capacity of 18,000 metric tons a year, operated 111% of that capacity in the last half of 1955. During the first nine months of operations in 1954 output was 12,217 tons and for the whole of 1955 the plant produced 18,340 tons.

The fertilizer plant has been of considerable benefit to Iceland's economy. Not only has it cut back the need for imports, but it has been able to pick up some export business.

Plans have been made for the construction of a phosphate fertilizer plant but progress was stalled because of the priority granted by the government for the erection of a cement plant. Now the fertilizer administration is pressing the government for permission to secure financing abroad to cover half the cost of the plant.

Inquiries for equipment have been made in U.S., France, Italy, Germany and the U.K. The U.S. is not in a favorable position to se-

cure the business because the Icelandic government wishes to conserve its dollars exchange.

Sponsors of the phosphate project claim that savings for the domestic economy by the new plant would cover the foreign exchange investment required for equipment in three years.

### Austrian Production

The production of fertilizer materials in Austria totaled 653,000 tons in 1955, a boost from the 568,000 tons put out in the previous year. Export trade is improving and Austrian products are now being sold in several important world markets.

### S. A. Superphosphate

Total superphosphate production in the Somerset West and Umbogintwini factories of Knoch and Capex, Ltd., South Africa, this year will be sufficient to meet the full need of the

country. The directors assess output at around 800,000 tons.

The Umbogintwini factory will produce about 560,000 tons. The plant includes a Petersen sulfuric acid unit stated to be the first in Africa, cost \$5.6 million and includes facilities for burning pyrites. The plant when completed, will produce at the rate of 200,000 tons of 78% sulfuric acid a year and most of it will be used for the manufacture of superphosphate.

The shortage of sulfuric acid has for a long time been a retardant factor in South Africa's efforts to become independent of outside sources as far as fertilizer materials concerned.

### Turkish Needs

The International Cooperation Administration has published a list of nitrogenous fertilizer requirements as part of the aid program for Turkey. Listed are ammonium sulfate, ammonium sulfate nitrate, sodium nitrate, calcium nitrate, calcium cyanamide, calcium ammonium nitrate, to the value of \$200,000.

The buyer is Turkiye Zirai Donanim Kurumu, Ummud Mudurlugu, Ankara, Turkey. ICA says that the importer has not indicated any closing date for offers, and immediate contact is recommended for those who wish to participate in the business.

### U.K. Sulfuric Acid

The production and consumption of sulfuric acid in the U.K. are on the upswing. Figures for the first quarter of this year, according to the National Sulphuric Acid Assn., were higher than either the comparable period last year or in the last quarter of 1955.

At 593,509 tons production was 8% higher than in the last three months of 1955. Consumption rose to 598,885 tons in the first quarter of 1956, an increase of about 7% over the previous quarter's total of 559,587 tons.

With the recent commissioning of new plants, total productive capacity increased from 660,110 tons at the beginning of the year to 687,870 tons during the quarter. Output expressed as a percentage of capacity rose from 83 to 86.3.

### Fertilizer Included in Gift Shipment to Korea

BATESVILLE, MISS.—Five tons of fertilizer were included in a list of several thousand items sent from Batesville, Miss., recently to Korea.

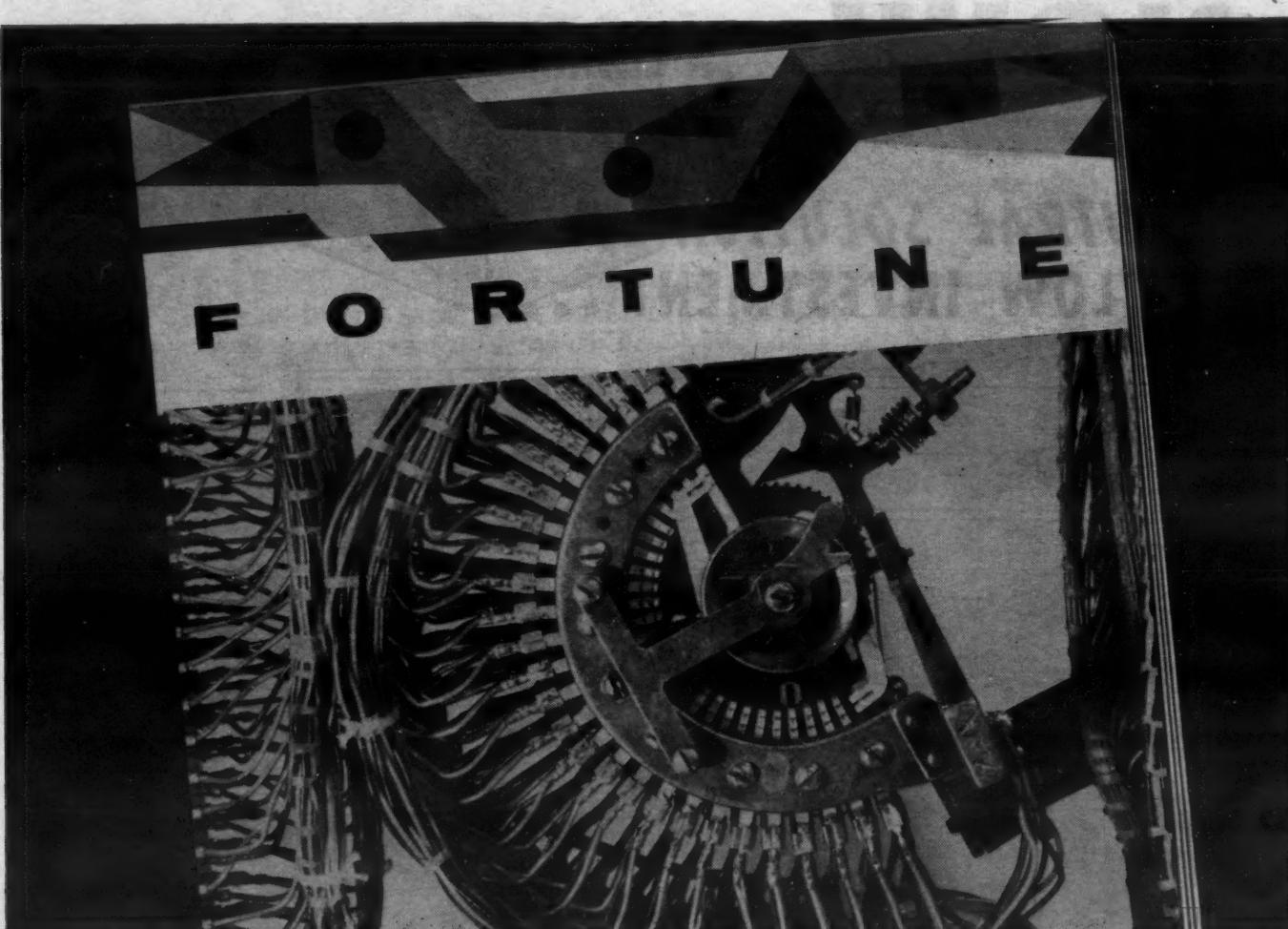
A 20-ton trailer truck carried the supplies to Columbus, Miss., where they were packaged and assembled with shipments from other parts of Mississippi for shipment to Mobile, Ala. An entire ship loaded with gifts from eight southern states, will sail for Korea on July 2.

The project, sponsored by the American-Korean Foundation, a non-governmental agency, was spearheaded in Mississippi by the extension service, with the actual work being done by county agents and community agents.

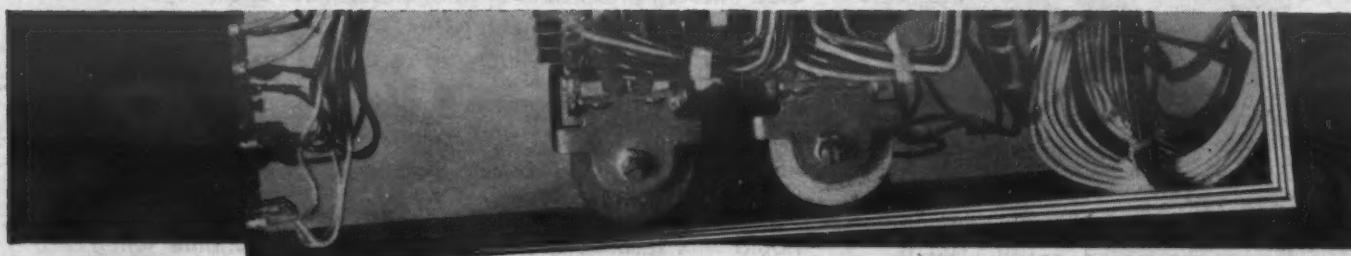
The supplies being sent to Korea will be used in educational programs for villages, with the bulk of the work being handled by the 10,000 4-H clubs in Korea. In many parts of Korea the 4-H clubs are the only form of school.

### IMC DIVIDEND

CHICAGO—The board of directors of International Minerals & Chemical Corp. has declared the regular quarterly dividend of \$1 per share on the 4% cumulative preferred stock of the corporation and a quarterly dividend of 40¢ a share on the common stock, both dividends payable June 30, 1956, to stockholders of record June 15, 1956.



## Clicking off 7,200 thank you's a day



THIS electronic maze you see is a tiny, but important part of Sohio's Data Logger system for engineered quality control — as featured in the cover story of Fortune magazine, April issue.

This unmatched quality control is just one of Sohio's ways of saying *thank you . . .* of returning the compliment of your confidence in us during our first 6 months of operation.

Sohio looks forward to serving you during the coming year. And you can be sure we will do our very best to merit your much-appreciated confidence in us.

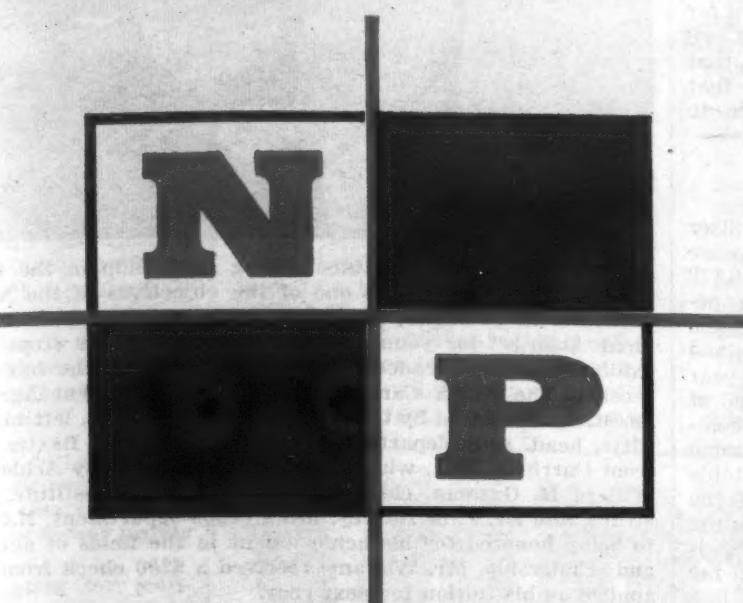
Our constant goal will be to provide you with the highest quality nitrogen materials and to repeat our *thank you's* every day in terms of the finest service available, anywhere.

*We're serious about service at Sohio*



SOHIO CHEMICAL COMPANY

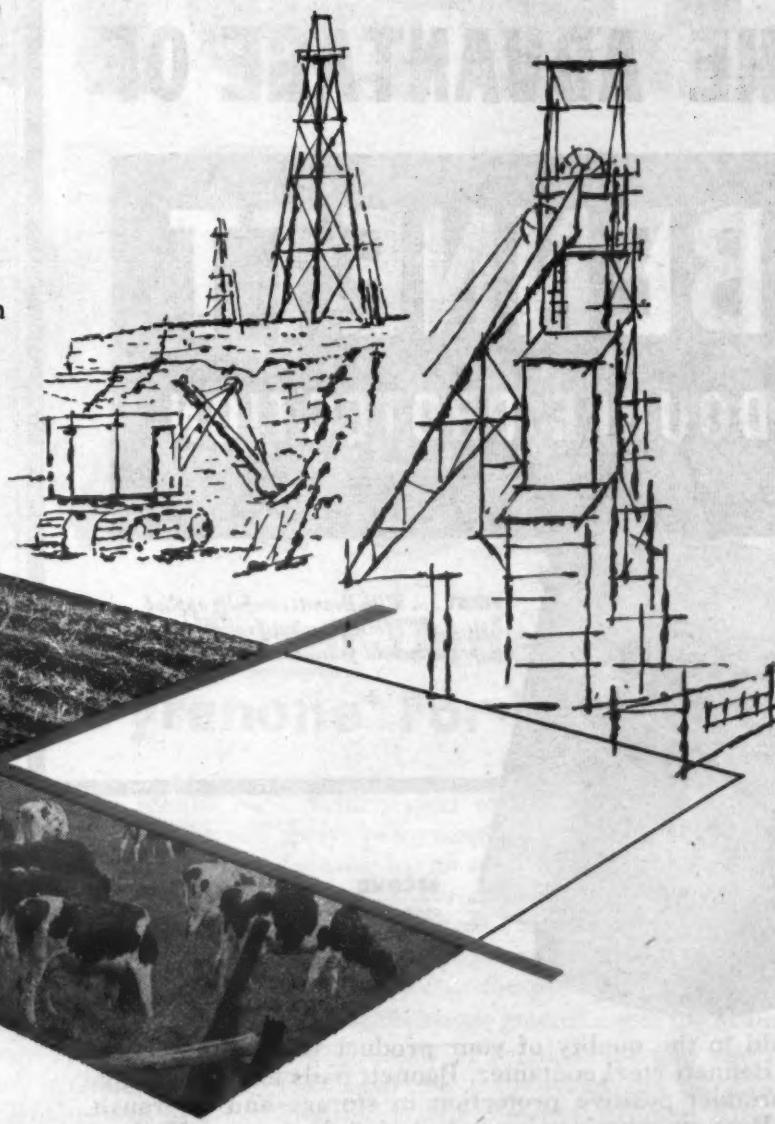
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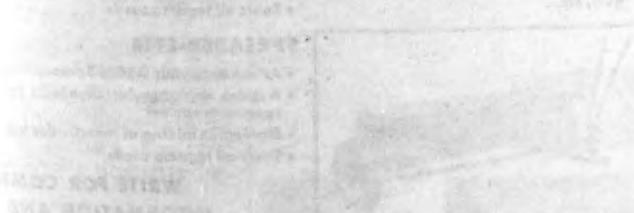
## *a joint venture in Potash*

A new, substantial and dependable source of potash for fertilizer manufacturers is being developed by National Potash Company in New Mexico.

National Potash is a joint undertaking of Pittsburgh Consolidation Coal Company and Freeport Sulphur Company. The former is one of the nation's major coal firms, the latter a leading producer of sulphur with additional interests in oil and other minerals. The skills which they bring to the mining, refining and marketing of potash assure top quality, uniformity and service.



**NATIONAL  
POTASH COMPANY**  
205 EAST 42nd ST. • NEW YORK 17, N.Y.



### Evidence of Codling Moth Resistance To DDT Reported

GENEVA, N.Y.—Evidence that the codling moth, a major pest of apples in New York, is developing resistance to DDT is reported by Edward H. Glass, Cornell entomologist of the experiment station at Geneva. His findings are based on observations in a commercial orchard in western New York.

"During the past three years there have been many reports of increased codling moth activity in commercial apple plantings from several sections of the country," says Dr. Glass. "In most cases, favorable codling moth weather and laxity in spraying have proved to be the chief cause of trouble."

An orchard in western New York in which codling moth had been well controlled with DDT for six years, beginning in 1946, showed considerable second brood injury in 1952. Then, early in the 1953 season, it was found that the first brood was not being held in check with DDT sprays.

Despite the fact that nine DDT cover sprays were used in this orchard in 1953, codling moth injury was much above normal for the area,

where four or five DDT sprays were giving almost perfect codling moth control.

Observations were continued and compared with similar control measures used in two other plantings and with insectary tests at the experiment station. The results were the same.

"The fact that DDT had been successfully used against codling moth in this western New York orchard for six years then failed for the next two seasons lends support to the idea that the strain of codling moth in that orchard is developing resistance to DDT," concludes Dr. Glass.

### Alabama Sales

MONTGOMERY, ALA.—Fertilizer sales in Alabama during April were 312,676 tons compared with 249,172 for the same month a year ago, according to a statement issued by the State Department of Agriculture and Industries. Sales for the fiscal year which began Oct. 1 through April of this year totaled 765,938 tons, compared with 866,032 tons for the same period a year ago. Most notable change in fertilizer practice in the state as indicated by the report is the sharp increase in demand for the 4-12-12 grade which is running far ahead of the volume reached last year.



**AGRONOMY AWARD**—Encouraging leadership in the field of agricultural education and research is one of the objectives of the National Plant Food Institute. In 14 states, the Institute annually sponsors "Agronomy Achievement Awards" for young men majoring in either crops or soils, who have exhibited unusual leadership potentialities and who have notable scholastic records. The North Carolina State College Student Agronomy Club is the latest to be honored by the Institute. Shown above, left to right, are Dr. J. W. Fitts, head, soils department, N.C. State; Tully Baxter Williams, a junior from Currituck, N.C., winner of the 1956 Agronomy Achievement Award; Dr. Willard H. Garman, chief agronomist for the Institute, who presented the award, and Dr. Paul Harvey, head, crops department, N.C. State. In addition to being honored for his achievement in the fields of agricultural leadership and scholarship, Mr. Williams received a \$200 check from the Institute to be applied on his tuition for next year.

### American Potash Receives Safety Award

LOS ANGELES—The Los Angeles plant of American Potash & Chemical Corp. recently received an award from the National Safety Council for an accident-free record during 1955.

The award was presented to the chemical company's Los Angeles plant at a Business and Industry Safety Contest dinner held at Los Angeles' Ambassador Hotel.

The current safety award marks the eleventh received by American Potash & Chemical Corp. and its various divisions during 1955-56, with nine such awards received last year and two so far in 1956.

In line with the present award, the company's Los Angeles plant is nearing completion in August of its third year without a lost-time accident.

equipment and supplies in 1955 as compared with \$237,735,000 during the previous year.

Included in these figures are agricultural chemicals retailed through these two outlets. No finer breakdown of figures is issued by the state, as estimates are based on sales taxes paid to the state by the stores. Figures are released by the Division of Research and Statistics of the State Board of Equalization.

Retail sales for all industries increased only about 11% during the same period, indicating a relatively stronger interest in agricultural enterprises of one description or another. Each quarter of the year showed a significant gain over the corresponding quarter of the previous year.

### Never Underestimate the SALES POWER of YOUR NAME in YOUR MARKET

Your label means controlled sales! Write today...  
**PBI** **PRIVATE BRANDS**  
300 Southland • Dept. CL • Kansas City, Kansas

### California Farm Stores Increase Sales During 1955

SAN FRANCISCO—Two classes of retail stores selling farm chemicals in California increased their total annual sales last year by about 16% above the 1954 total.

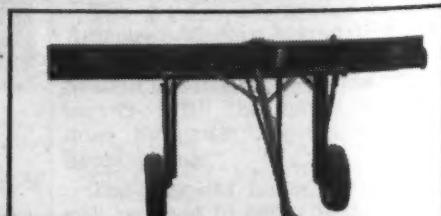
Farm implement dealers and farm and garden supply stores sold a total of \$275,041,000 in farm and garden

### 3 Gandy DRY CHEMICAL APPLICATORS



#### PLANTER ATTACHMENT

- Fits all planters
- Applies dry, granular insecticides
- Eliminates mixing insecticides with fertilizer
- Controls wireworms, rootworms, maggots, etc.



#### HI OR LO SPREADER-ETTE

- Drops insecticides into corn whorls. Kills borers as they try to enter plant after hatching.
- One application effective for weeks
- Quickly adjusts to heights of 3, 4 and 5 feet
- Sows all legume seeds



#### SPREADER-ETTE

- Attaches to your Gandy Spreader-Seeder
- Applies dry granular chemicals for wireworm or rootworm control
- Eliminates mixing of insecticides with fertilizer
- Sows all legume seeds

WRITE FOR COMPLETE INFORMATION AND PRICES Dept.

**E. S. GANDRUD CO., INC. OWATONNA, MINNESOTA**  
PIONEERS IN TESTED DRY CHEMICAL APPLICATORS — 4 YEARS IN THE FIELD

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You add to the quality of your product when you package it in a Bennett steel container. Bennett pails and drums give your product positive protection in storage and in transit. Every Bennett container is pre-tested at the factory. With all their superior qualities Bennett steel containers are surprisingly low in cost.

If your product requires lined containers, Bennett engineers welcome the opportunity to consult with you as to the proper type of "Hi-Bake" lining for your specific product. Investigate Bennett's services today.

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Write today for this informative booklet on Bennett "Hi-Bake" pails and drums.

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# Determine Standard Costs As Base for Figuring Price Of Manufactured Products

How does the management of a fertilizer or pesticide manufacturing plant determine standard costs and thus establish a basis from which to work in figuring whether, and how much, profit is being realized from a given operation? This is a very practical query, the answer to which is difficult in the absence of a knowledge of base costs. Selling prices may be based either on "guesstimates," or on known, predetermined costs. The difference may be a large factor in whether or not a profit is realized. Fertilizer and insecticide plant managements have found the use of system of cost standards helpful in management and in the control of the plant for these reasons:

- Such a system of cost standards spotlights cost elements which may be out of line with that which would mean higher profits for the plant.
- Provides information for planning production and for establishing realistic competitive prices.
- Builds a stronger spirit of cooperation of everyone in the plant to meet or to beat the established cost standards.
- Keeps routine bookkeeping entries at an absolute minimum for a cost accounting system.

In determining the standard costs for the fertilizer plant, a program will need to be followed that is specifically keyed to this type of operation. There are no standard costs that can be used universally—standard costs to the operator are his own standard costs, rather than those set for the entire fertilizer and insecticide industries.

A program easily followed to set up standard costs for plant operation, should include the establishment of base rates and adjustments for variation.

To establish base rates, it must be remembered that each product manufactured has a variety of cost elements involved. And, these in turn will vary with each different product produced. The quality and quantity of materials needed, the amount of direct and indirect labor involved, and the portion of the plant overhead will be different on every item turned out.

First, the different types of manufactured fertilizers and insecticides must be classified. An easy way is to use a standard twelve-column accounting work sheet to record the information. List the products for which standard costs are established, down the left-hand side of the sheet.

This should be further subdivided to include any variations. For instance, in determining standard costs, sub-classify the products into sizes, quantity, type, quality, and materials used.

Next, apply the major cost elements to the different products manufactured in the plant. This will include the materials, the labor and the overhead required for the different types of production for which standard costs are being established. This division of various cost elements is entered at the top of each column across the top of the twelve-column standard cost work sheet.

Raw materials are of course considered a direct cost of most manufacturers. This may be uniform for a product, but if quantity discounts on materials enter the picture, the cost will vary with the larger quantity being considered.

Direct labor costs will be subdivided into the various activities involved. Cost for this will be based on one's own estimate of the direct

labor charges for different types of fertilizer and insecticides produced in the plant.

For instance, direct labor charges in several main plant activities may be in the picture. Other work (or subdivisions of this work) involved in the different production processes of the plant will expand or reduce the number of columns needed to record these cost estimates for standard costs.

Overhead expenses may be determined on the basis of quantity or in some ratio to the direct labor charges. This phase of standard costing will be more of an estimate when first established than will the direct labor or material charges. As more and more

information is accumulated on the basis of the cost accounting system, ways will be found to make adjustments presenting a more realistic picture for the fertilizer plant's standard costs in the future.

In making adjustments for variations, it must be remembered that standard costs are of the moment. Changes in the local and national economic pictures will demand making adjustments in the standard costs for the plant to keep them up-to-date, competitive, and profitable.

With a complete breakdown of the various cost elements involved in standard costs, one is ready to make any adjustments quickly in the established costs. For instance, if certain material costs advance, one can quickly make the adjustments for the items involved in this change. If wage rates increase, adjustments can be made in the production involved.

These adjustments are keyed specifically to each column on the stand-

ard cost work sheet. For instance, if wages in one department advance, adjustments will be made accordingly in all items included in this column. This will save a great deal of time and keep the standard costs in line with current conditions.

If adjustments are made promptly (up or down) and are based on the changing conditions, the manufacturer will find that actual costs follow standard costs closely. This, of course, will make one's operation more competitive and will insure better profit for the fertilizer and insecticide plant.

## RUST VICTIM

LEXINGTON, KY.—The Kentucky Agricultural Experiment Station has removed the Merion bluegrass variety from its recommended list. Research workers said the grass, hailed several years ago as the answer to certain turf problems, succumbed in 1955 to a strain of rust. In tests in 1954 the variety also was attacked by a smut fungus, they said.

# VIRTUALLY NON-TOXIC

## Proved Safety Factor Underscores Importance of Pyrenone\* For Farm Crops

As a result of recent federal legislation, specific standards of safety have been established for the application of pesticides to food crops.

Object of this legislation, popularly known as the Miller Bill, is to safeguard the public health.

Under the Miller Bill, Pyrenone (technical *piperonyl butoxide* and *pyrethrins*), CPR dusts and sprays (combinations of *piperonyl cyclonene*, *pyrethrins* and *rotenone*), Pyretox, pyrethrum and rotenone are exempt from the requirements of a tolerance — when applied to growing crops. They may be used right up to the time of harvest.

With respect to the application of dust and spray protectants to stored grains, *piperonyl butoxide* has an approved tolerance of 20 p. p. m. ... and *pyrethrins* a tolerance of 3 p. p. m. These two chemical agents are the active ingredients of the Pyrenone protectants. Yet the quantities specified for use in the package directions are less than the tolerances granted under the Miller Bill.

This season use Pyrenone and play safe. It protects both the crops — and the farmer's crop investment! For complete technical data, write to the nearest office of Fairfield Chemical Division, Food Machinery and Chemical Corporation.

\*Reg. U.S. Pat. Off., F.M.C.

# Pyrenone

Sales Headquarters: 1701 Patapsco Avenue, Baltimore 26, Md.

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FMC CHEMICALS INCLUDE: WESTVACO Alkalies, Chlorinated Chemicals and Carbon Bisulfide • BECCO Peroxygen Chemicals • NIAGARA Insecticides, Fungicides and Industrial Sulphur • OHIO-APEX Plasticizers and Chemicals FAIRFIELD Pesticide Compounds and Organic Chemicals • WESTVACO Phosphates, Barium and Magnesium Chemicals

In Canada: Natural Products Corporation, Toronto and Montreal



## CITY HALL PROMOTES FERTILIZER USE

OAKLAND, CAL.—The use of fertilizers to improve home lawns is being promoted by the Oakland City Park Department. Memorial Park, in the heart of the downtown district, flourishes with healthy deep green turf, and to inform distressed home gardeners how the grass is kept so beautiful even through the long, hot, dry, and completely rainless summers, the park department has erected little signs of advice:

"This lawn is Astoria bent," the signs say. They then state that the lawn is "fertilized in April, May, June, July, and December with five pounds of ammonium sulfate per 1000 square feet; in March with five pounds of single superphosphate per 1000 square feet; and in August and September with organic fertilizer at the rate of 20 pounds per 1000 square feet."

Then Oaklanders, making notes of this, go to their own garden supply houses to buy the materials necessary to create green lawns for themselves.

### COTTON INSECT GUIDE

STATE COLLEGE, N.M.—A "Cotton Insect Control Guide" for 1956 has been released by the Agricultural Extension Service of New Mexico A&M College. The guide covers early season control, late season control, and farm clean-up; tells how to make infestation counts; and gives general recommendations on use of specific insecticides for control of various cotton insects. John J. Durkin, extension entomologist, prepared the guide.

## E. D. Toland, Jr., Is Monsanto Treasurer

ST. LOUIS—Edward D. Toland, Jr., St. Louis, has been elected treasurer of Monsanto Chemical Co., it has been announced by Charles Allen Thomas, president. Monsanto's board of directors elected Mr. Toland to his new post at its March 28 meeting.

Mr. Toland has been an assistant treasurer since January, 1954. He succeeds William W. Schneider, also of St. Louis, who is a vice president and a member of the company's board of directors, executive committee and finance committee and who has been acting as treasurer since the sudden incapacitation of the former treasurer about 2½ years ago.

A native of Concord, N.H., Mr. Toland received a B.A. degree in chemistry from Yale University in 1936 and an M.B.A. degree from Harvard University's Graduate School of Business Administration in 1948.

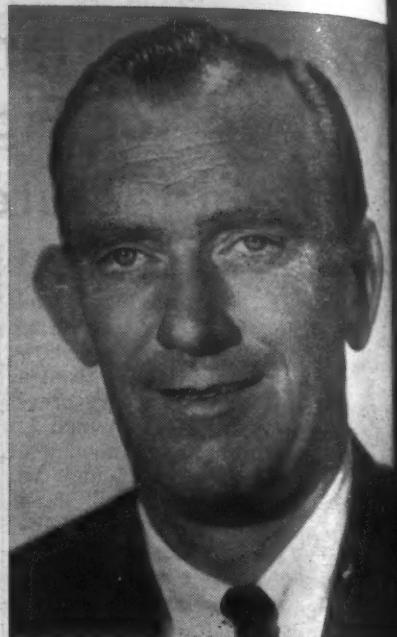
He was employed in the sales organizations of U.S. Industrial Chemicals Co. of Detroit and the B. B. Chemical Co. of Boston before becoming assistant to the manager of the syndicate department of Shields & Co., investment bankers and brokers of New York, in 1948. He joined Monsanto in 1951 as assistant to the treasurer.

### \$6 FOR \$1

COLLEGE STATION, TEXAS—Cotton producers who apply insecticides at the proper time may expect an increase in yield of at least 100 lb. of seed cotton an acre for each treatment. This is a return of about \$6 for each dollar spent for insect control, says F. M. Fuller, Texas A&M extension entomologist.



Paul Staub



Rod Taft

**AMERICAN POTASH APPOINTMENTS**—Shown above are two new district sales managers for American Potash & Chemical Corp. Rod Taft, who was supervisor of potash sales for the firm, has been transferred from Los Angeles and becomes district sales manager at the company's newly opened office in San Francisco. He will handle sales in northern and central California, Nevada, Utah and Colorado. Paul Staub has been named Northwest district sales manager. He will operate out of Portland, Ore., and will cover Oregon, Washington, Idaho, Montana, Wyoming and British Columbia. William M. Cline, western sales manager for American Potash & Chemical Corp., said that opening offices at San Francisco and Portland was a part of the firm's current development and expansion program.

## Virus Disease of Beans Under Study

CORVALLIS, ORE.—A new virus responsible for a "sudden death" disease in Blue Lake green beans will receive special attention from Oregon State college plant scientists this summer. The OSC scientists hope to develop control measures before the disease has a chance to cause economic damage to Oregon bean growers.

Last year, OSC researchers were able to demonstrate that the sudden death of nearly mature Blue Lake

bean vines was due to a new, unnamed virus rather than a well-known virus. The new virus enters fields from some unknown source, and researchers haven't determined how the virus is spread from plant to plant.

The disease hasn't done much damage as yet, except in a few small areas. But if it should become more common, commercial production of Blue Lake beans could become impractical in many areas.

More than 10 million dollars worth of snap beans were grown in Oregon for processing last year and most of these were of the Blue Lake type.

(Advertisement)

## Nuclay Proves Best Dust Diluent

NUCLAY—a natural western pyrophyllite developed by Kennedy Minerals Company, 2550 East Olympic Boulevard, Los Angeles, California, in 1955. The material is a diluent carrier and besides its compatibility with antibiotics is also becoming the leading dust diluent for other insecticides and pesticides.

The compatibility and stability ratings are attributed to the chemical purity and resistance to moisture absorption. No water solubles are present which reduces the capacity to react or catalyze various insecticide chemicals.

The following quotation is taken from Professor Peter A. Ark, Plant Pathologist, University of California report, "Streptomycin Can Control Pear, Apple Blight," February, 1956:

"Testing several commercially agricultural dust carriers showed that such materials as talc, atta clay, Fuller's earth and frianite were most unsuitable carriers of streptomycin because of their capacity to immobilize streptomycin, why pyrophyllites ABB and Nuclay and flowers of sulfur proved to be well suited as carriers for streptomycin. Streptomycin is freely separated from these carriers on contact with water and their dispersion and sticking properties appear to be quite satisfactory for pear surfaces."

"It is interesting to note that recently Clayton and Grosso demonstrated that pyrophyllite is of considerable importance in regulating the availability of the fungicide zineb used to control blue mold of tobacco. They showed that a 20 per cent zineb-tobacco dust gave less effective con-

trol of blue mold than a 10 per cent zineb-pyrophyllite dust.

"Streptomycin-pyrophyllite formulations containing 1000 and 500 ppm of the antibiotic were prepared and tested in many pear orchards, in some cases in comparison with the standard copper-lime formulations and in other cases in comparison with wettable forms of streptomycin.

"It must be pointed out that fire blight was not in epidemic form in 1955 throughout all pear-growing areas. In spite of that, it is felt that enough blight developed in some experimental plots to justify a reasonable safe conclusion as to the merit of the materials used.

"The data indicates that streptomycin dust formulation can provide the same degree of protection from fire blight as a standard copper-lime formulation or a high level (100 ppm) wettable streptomycin spray. Economical considerations of streptomycin-pyrophyllite dust lead to the conclusion that it may solve the problem of cost of streptomycin treatment for pear blight. Considering the fact that the price of dust containing 500 ppm is about the same as that of the 20% copper-lime dust and that of the 1000 ppm is only slightly higher than copper-lime dust, it may be suggested to pear growers that they give serious consideration to streptomycin-pyrophyllite formulations as a possible substitute for copper in areas where the latter is not desirable because of unfavorable reaction on the fruit finish. Thoroughness and timeliness of applications should be born in mind if consistently good results are to be expected."

**M / W**

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by CHASE BAG

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General Sales Offices: 309 W. Jackson Blvd., Chicago 6, Ill.  
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# Better Selling

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW



## SHOP TALK

### OVER THE COUNTER

### FOR THE DEALER

By EMMETT J. HOFFMAN  
*Croplife Merchandising Editor*

Are you thinking of adopting trading stamps? If so, the publication, *Food Topics*, circulating among the grocery trade, poses six important questions as a check list before selecting a stamp plan.

Here are the six main categories of questions, with a number of additional queries under each:

1. How much will it cost me?

Double-check any company that deviates from an approximate % cost. The cost of effective merchandising and gift center operation alone is 1 1/2%. You'll have to increase your sales volume 14% to reach the break-even point.

2. How sound is the company involved?

What is its record, its reputation with the public and other food-retailing customers? How is it rated by banks and Dun & Bradstreet? Does it have a minimum of 95-97½% reserves for redemption? How long has it been in business? There are 886 stamp companies; the fate of your venture may very well lie in your choice. Check the company's catalog with catalogs of other companies. Carefully compare the items offered and the number of stamp books that are required for redemption.

3. Does it offer generous support programs?

What about newspaper, radio and television advertising and who pays for the ads? Does your plan also tie-in with other community businesses, such as filling stations, department stores, cleaning stores, drug stores, jewelry stores? Once it has signed you, does it maintain active, progressive contact, providing electric signs, display posters, promotional materials?

4. How will its plan appeal to my customers?

Will your customers have to travel far to redemption centers? If redemption centers are too far away and redemption is possible only by mail, will your customers take kindly to this inconvenience? Will they get the merchandise they want and need at the time they want it? Will it be nationally advertised brand names they recognize and which will encourage them to return to your store for more stamps?

5. How flexible is the stamp plan?

Does the company allow for extra stamps as gifts to start a program, or extra stamps to help move slow-moving or overstocked items; does it sponsor feature promotions during certain periods when items are reasonable for fewer stamps? Does your contract have a 30-day escape clause in case you want to get out from under?

6. What management problems must I face?

What about pilferage at the checkout counter, or checkers being too fast and footloose with stamps for friends? What about all customers getting stamps every time without fail? Does your contract permit you to give cash or merchandise in your store, or only premiums? This is a most important point—weigh it very carefully.

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5. How flexible is the stamp plan?

Does the company allow for extra stamps as gifts to start a program, or extra stamps to help move slow-moving or overstocked items; does it sponsor feature promotions during certain periods when items are reasonable for fewer stamps? Does your contract have a 30-day escape clause in case you want to get out from under?

6. What management problems must I face?

What about pilferage at the checkout counter, or checkers being too fast and footloose with stamps for friends? What about all customers getting stamps every time without fail? Does your contract permit you to give cash or merchandise in your store, or only premiums? This is a most important point—weigh it very carefully.

## New England News Notes

By GUY LIVINGSTON  
*Croplife Special Correspondent*

With one of the coldest springs on records, New England farmers had to work overtime to protect their crops from killing frosts. Caps were put on beds and smudge pots were put out in fruit orchards. Full extent of damage will not be known until state entomologists, continuing a survey of crops, make their report. However, truck farmers have already announced that crops will be much later than usual this year. It was estimated following the killing frost of May 18 that damage to crops would exceed \$10,000,000.

### Emphasis on Lime

Added emphasis is being given this year to the use of ground limestone by farmers in the state through the Agricultural Conservation Program, following an all-time low on a tonnage basis in 1955.

Practices formerly made it easy to provide lime for soil to all farmers, Harold F. Tompson, state administrative officer for the Agricultural Stabilization and Conservation Office, reported.

However, in 1954, the Agricultural Conservation Program was so changed that it became difficult to interest farmers in the use of needed amounts of lime. This year, several counties have increased the federal cost-share for lime and this change has shown its effectiveness with requests for lime already far beyond those for all of 1955.

### Diverted Acreage

The question of what will be done with any acreage that is diverted by the tobacco farmer in the Connecticut Valley has come in for considerable discussion, Grant B. Snyder, head of the department of olericulture, University of Massachusetts, reports. He said one of the answers may be that of substituting other cash crops such as vegetables or small fruits.

The Valley has a very satisfactory climate for most vegetables, ranging from the longer growing season along the river to the cooler but shorter season in the hill districts.

"Soils also have sufficient variation in type to grow a wide variety

(Continued on page 17)

## Pennsylvania Firm Shows Sales Prospects How Fertilizer Use Pays Off for Regular Customers

By PHIL LANCE  
*Croplife Special Writer*

Showing prospects black-on-white how their neighbors are enjoying greater productivity through the application of suggested types of fertilizer has netted new customers and greater sales volume every year for the Midway Mills, Lebanon, Pa.

"We make it a practice of prompting our fertilizer customers to keep records that show the productivity of their crops," says Forrest D. Potter, owner. "We have two reasons for pushing this. First, it lets the customer know what the fertilizer that we are selling is doing for his fields. Secondly, we use the records in selling other customers on our fertilizer. And we have found, that once a customer starts keeping records, that he keeps right on doing so because it provides him with a lot of useful data that he can use for other purposes."

If a prospect is not converted into a customer for Midway Mills fertilizers, Mr. Potter asks that customer if he can spread a small quantity of the suggested fertilizer on the field next to the crops that don't have fertilizer. Most prospects agree to this and Mr. Potter sends one of his mill hands out to do the job.

At harvest time, he contacts the prospect again and asks him the percentage of productivity that he has enjoyed between the two. Then he mentions the cost of the fertilizer that was spread over the area and asks the farmer to determine if he isn't substantially ahead by using the recommended fertilizer. In 99% of these cases, Mr. Potter sells that customer fertilizer the next season.

Farmers in the central Pennsylvania area are cutting down the crop acreage in many cases for several reasons. In so doing, they are eager to enjoy the greatest productivity out of the acreage that they use. When the cost of fertilizer is brought up in comparison to the percentage of crop increase, the average farmer realizes that he is benefiting by using fertilizer.

"We have been able to induce customers who are already buying fertilizer to switch over to our brands," says Mr. Potter, "by giving them an improved formula over the one that they are already using. In many cases, each farmer sticks to one formula for all his crops regardless of the variation. We point out to them, that while one formula may be excellent for one type of crop, another is needed for a second. Also, that changing soil conditions often dictate a change of formula.

"We explain to them that it is just as easy to use two or more fertilizers as it is to use a single one. That we give them a price based on the entire quantity rather than on the individual formula quantities. So they certainly should take advantage of this situation."

In many cases, a new account can only be opened by extending credit to the customer, and Mr. Potter does his own checking to determine if this can be approved. In the last few years, there has been very little loss due to bad debts, because many fertilizer and farm supply dealers in the county call one another to check on a customer's credit standing. This has come to the attention of the local farmers and they have made a determined effort to be in the clear.

"While we are all vying for the same business, it is only good business that we dealers stick together to some extent," explains Mr. Potter. "In previous years, many unscrupulous farmers have made it a practice of grabbing credit wherever it was to be had, and as all dealers are looking for business, they extended it. As a result, many dealers in the county went broke and others are working on a cash basis.

"But when a customer does want credit and we know the dealer from whom he has made previous purchases, we aren't ashamed to call him for a credit standing. In return, that dealer can call us, so it works out well all around."

Mr. Potter took over the manage-

(Continued on page 17)



**SALES MATERIALS**—Jim Pfeiffer, foreman at Midway Mills, Lebanon, Pa., is seen in the above photo showing a customer material that helps influence the sale of fertilizer. An important sales tool for the firm is to show prospects how proper fertilizer use pays off for regular customers.

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## FARM SERVICE DATA

Extension Station Reports

To guard against pasture shortage in July and August—normally a hot and dry period—extension agronomists at West Virginia University suggest that West Virginia farmers plant a field of Sudangrass for supplementary grazing. The agronomists say Sudangrass will handle three to four mature animals per acre and is quite dependable except in very dry summers. During good growing

weather it can produce pasture 18 inches tall in 6 weeks. It recovers quickly after pasturing, and can be used until it is frosted.

Plantings are made best about 10 days to 2 weeks after normal corn-planting time. Seedlings can be made even into the first week of July, but the pasture season is greatly reduced by such a late planting.

One of the best methods of plant-

ing is to finish off seedbed preparation with the application of 300 lb. per acre of 10-10-10 fertilizer, the agronomists say. Cultipack the area, drill the Sudangrass with 200 lb. per acre of 5-10-10 and cultipack again.



G. R. Epperson, associate agronomist at Virginia Polytechnic Institute, says an 80 bu.-per-acre corn crop removes about 112 lb. of nitrogen from the soil. There must be considerably more than this amount of nitrogen in the soil or the corn crop cannot take what it needs.

He advises:

On fine-textured or clay soils, apply nitrogen sidedressing by the time the corn is 12 to 18 inches high. On coarse-textured or sandy soils, sidedress with nitrogen throughout the period of cultivation. On any soil,

if the corn turns pale green or yellowish up to the time of silking, make an application of readily available nitrogen.



Dipping seed pieces in a water solution containing streptomycin, or a combination of streptomycin and an organic fungicide, increased potato yields in trials conducted by Pennsylvania State University last year. In these tests, conducted in seven different parts of the state, increases per acre ranged from 165 bu. downward. In a few instances, no improvement or small reductions in yield were obtained from the treated seed.

Chances of improved yields, in relation to the relatively low cost of the materials used in the treatments, appear large to the station and extension plant pathologists who conducted the trials. They are Harry C. Fine, O. D. Burke, R. S. Kirby and L. Nichols.



Annual field bromegrass has won a job for itself as a soil conservation crop in Massachusetts, trial seedings made last year reveal. It provides good protection against both wind and water erosion. One of the better characteristics of this new type of bromegrass is that the top growth is slow and lower than winter rye. This cuts down the difficulty of getting the top growth sufficiently underground before starting a succeeding crop.

Results of trial seedings of annual field bromegrass made on several Bristol County farms last fall between late August and mid-October were examined by Dr. William Colbeck, head of the agronomy department at the University of Massachusetts; Ralph Donaldson, Extension agronomist; and Harold Tompson, executive officer of the Massachusetts State Agricultural and Stabilization office in Amherst.



Apple scab, long a costly pest of the orchardist, is writing its own record of spore discharge from overwintering mycelia at the experimental farm of the Connecticut Agricultural Experiment Station. The spores themselves, taken from a known volume of air about 18 inches above their point of liberation, are caught on a wax-coated micro slide. Clockwork moves the slide past a narrow intake slit, so that the exposed slide represents a chronological record of spore dispersal for 24 hours. A vertical slot keeps the trap headed into the wind.

Patrick M. Miller, of the station's department of plant pathology and botany, is responsible for operation of the Hirst spore trap in Mt. Carmel. Dr. Miller reports his findings regularly to William D. Tunis, extension fruit spray specialist, who relays the information to apple growers by radio and press.

This research on timing of apple scab spore dispersal is conducted jointly with the station's department of climatology. Paul E. Waggoner, head of that department, used the spore trap effectively last year as a device to help forecast conditions favorable to outbreak of tobacco blight.

In Connecticut and elsewhere the spore trap has also been used as aid in forecasting spread of potato blight. Dr. Waggoner says the Connecticut Station hopes also to learn more about botrytis rot of strawberries by means of this mechanical spore-census taker.

### WILLIAM O. FLOWERS DIES

LOUISVILLE — William O. Flowers, former division sales manager of Federal Chemical Co., died recently at the age of 64. He retired from the firm five years ago.

## SALESMEN... to help boost YOUR profits!



### LION Advertisements Sell LION Nitrogen, and Your Mixed Goods, Too!

Continuous Lion advertising appears in leading farm publications, month-after-month, to pre-sell the Lion brand to farmers—and to sell the value of your mixed fertilizers as well!

Current advertisements are appearing in Farm and Ranch-Southern Agriculturist, Progressive Farmer, The Farmer, Nebraska Farmer, Kansas Farmer, Prairie Farmer, Wallace's Farmer & Iowa Homestead, Wisconsin Agriculturist and Farmer, Missouri Ruralist and Missouri Farmer. All of these advertisements are in color.

Each Lion advertisement promotes the economic benefits of properly using fertilizers, including Lion Ammonium Nitrate, to help increase the farmer's profits. Each advertisement sells hard on the importance of soil tests in the intelligent use of all commercial fertilizers. Lion, a leader in nitrogen production, leads the way to good fertilization practices... to better profits for you!

### LION'S QUALITY LINE OF NITROGEN FERTILIZER MATERIALS

LION ANHYDROUS AMMONIA—82.2% nitrogen. Quality guaranteed.  
LION AQUA AMMONIA—Ammonia content above 30%—other grades to suit your requirements.  
LION AMMONIUM NITRATE FERTILIZER—Improved spherical pellets. Guaranteed 33.5% nitrogen.  
LION NITROGEN FERTILIZER SOLUTIONS—Various types to suit your particular manufacturing needs.  
LION SULPHATE OF AMMONIA—White, uniform, free-flowing crystals. Guaranteed 21% nitrogen.

**LION OIL**  
A DIVISION OF MONSANTO  
CHEMICAL COMPANY



**COMPANY**  
EL DORADO, ARKANSAS

DISTRICT SALES OFFICES: Lion Oil Building, El Dorado, Ark. • Insurance Exchange Building, Des Moines, Ia.  
National Bank of Commerce Building, New Orleans, La. • 1401 Building, Atlanta, Ga.

## Value of Agricultural Research Highlighted in Bank Report

BOSTON—Agricultural research has played a major role in shaping New England's economy, the Federal Reserve Bank of Boston reports. Research findings in New England have included hybrid corn and scores of new vegetable varieties. There also has been a whole series of discoveries that have helped to develop a New England poultry industry that brought in over \$237,000,000 in 1954, the bank said.

Six of the seven agricultural experiment stations in New England are located at the state agricultural colleges. The seventh, now located at New Haven, Conn., was established in 1875.

"The results of this research have been, and will continue to be, a notable raising of the standard of living of farm families," the bank summarized.

It pointed out that the Storrs station discovered in the late 1800s that legumes had the ability to take nitrogen from the air. This proved the importance of legumes in hay and pasture seeding mixtures.

In the course of bringing the gypsy moth under control, the bank said, entomologists at the Massachusetts station discovered lead arsenite as an insecticide.

Rhode Island, the bank said, discovered in the late 1800s that a lack of lime in the soil was a severely limiting factor in crop production on New England's mineral soils. Since that time millions of tons have been used to correct soil acidity.

The development at the New Haven station of a practical method of producing seed for hybrid corn raised yields per acre by 15%. It is estimated to have produced millions of dollars in new wealth.

"In fact," the bank said, "this research has more than paid for the operation of the nation's agricultural research stations since . . . they have been in existence." The bank cited the work at the New Hampshire station in developing vegetable and fruit varieties that are tailor-made to fit the New England climate.

Development of the poultry industry is an outstanding example of how these New England agricultural research centers have been a tremendous force in shaping the region's economy, the bank said.

"Today, poultry is the major source of agricultural income in Maine, New Hampshire, Massachusetts and Connecticut . . . It's a sizeable income producer in Rhode Island and Vermont. The six New England states are consistently among the top seven in the nation in eggs produced per bird," the report said.

## Agronomy Field Day Set in Maryland

COLLEGE PARK, MD.—The University of Maryland Agronomy Department will throw open its doors June 26 at the Plant Research Farm north of the College Park campus for an open house and field day.

Tours of the farm will begin at 8 a.m., reports Charles P. Ellington, diversity extension agronomist. Visitors will see experimental work now in progress on pasture renovation, fertility studies on small grains, corn and clover, and experiments in rotation and cropping systems.

In the afternoon there will be demonstrations of new machinery for seedling, fertilizing, harvesting and preserving. Direct throw forage seeders, band seeders, sod seeders and ammonia and liquid fertilizer applicators will also be demonstrated, Ellington says.



By AL. P. NELSON  
CropLife Special Writer

Oscar Schoenfeld was a methodical man. He always took his lunch hour from 11:30 to 12:30. He never took any more time than that nor less. Only once had he been five minutes late, and that was when he slipped on some ice one January day on his front porch as he left for work and split his pants at the right knee. Before he changed to a new pair and got to work he was five minutes late. But he consoled himself that he was always five to ten minutes early each morning, and so that made up for the five minutes lost at noon.

Now, as Oscar came back to lunch on the warm spring day, he saw bundle after bundle of small rose bushes lined up against the center store islands. He gaped, then looked at Tillie, the plumpish nervous bookkeeper who was addicted to ulcers when disturbed.

"What's this, Tillie?" he asked acutely. "Who ordered all these rose bushes?"

"I don't know," she said nervously. "The truck driver just left. They come from the Red Rose Nurseries in Illinois. I thought either you or Pat had ordered them."

"Ach, I didn't," Oscar growled. "It must be that Pat. Always he must be buyin', buyin', buyin'. Why can't he wait till the shelves get cleaned out a little, before he loads up again?"

Tillie looked agitated. "But Pat always says you have to have a stock before you can sell," she said. "He says it doesn't pay to be out of things when customers ask for them."

Oscar grunted, his lips tight. "It depends if the customers are those that pay their bills," he said. "Customers that owe money are always the ones that holler the most about this and that. We should holler right back at them about payin' their bills. Maybe that would shut some of them up."

Tillie wisely kept silent. She knew, from past experience, that when one talked about money with Oscar, there was only one angle, namely spend as little as one could and save all you could. No other course was ever considered by him.

"What's this?" asked Oscar picking up a fat envelope from Pat's desk and looking at Tillie.

"The ad man from the paper brought it in," she said. "Pat is to okay the ad and get it right back."

"So, we are advertisin' again this week?" Oscar asked. "He runs wild, that Pat. Why doesn't he skip a week now and then? Nobody will ever know the difference but that advertisin' man, and him I don't like."

He opened the package, although advertising was Pat's province. Spreading open a big sheet of proof he studied it for a minute, then let out a howl. "Ach, du lieber Gott!" he cried. "A full page ad! And he is giving away those rose bushes to the first 300 farm women who come in and get them! Always he gives away money. He forgets we want to take some of it in."

Nervously Tillie came forward. She had wanted to tell Oscar not to open envelopes that were on Pat's desk, but she never dared. Oscar would do it anyway, she knew, and now there was trouble brewing between the partners.

Luckily for Tillie, Pat McGillicuddy, the tall, angling partner of Irish descent came in at this moment. This meant Tillie would not have to answer for Pat's action. He could do that himself.

"So," said Oscar bitterly, "you still think you was born with a silver spoon in your mouth."

Pat frowned for a moment, as he looked at his desk, checking on telephone calls.

"I mean the way you spend money," almost shouted Oscar, his face red. "First you go and buy 300 rose bushes, with the season almost over, and then you spend a whole page ad telling farm women to come and get them free. What kind of business is this?"

"Oh, this rose bush promotion," Pat said genially. "Say, that is going to make some money for us. You wait and see."

"I should live that long," Oscar complained. "Why can't we stick to selling fertilizer, and insecticides and things like that? Why do we always have to advertise and give things away? Ach, why work hard to make money regular, and then spend it on crazy stuff like that?" He pointed at the rose bushes.

Pat McGillicuddy sat down in his swivel chair and looked at Oscar. "You just don't understand anything about sales promotion, Oscar," he said. "No more than you understand Greek."

"I don't want to know Greek!" Oscar snapped. "I will never go to Greece anyway. It costs too much, and I don't like olive oil anyway. What I want is more money in the bank. Is that wrong?"

"No, it isn't. That's what I want, too. I got those rose bushes at the tail end of a season for 16¢ each. That's \$50 for the whole lot."

"It's too much," Oscar said. "Who wants rose bushes now?"

"Farm women do," Pat said. "Especially when they get them free. And when they come to get them, one to a woman, they'll sell peat moss, fertilizer, rose dust, garden tools and lots of other things stacked around those

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bushes, with plenty of signs urging them to buy. Why, it is worth \$50 to bring lots of farm women into the store."

"How about the ad?" Oscar asked acidly. "That'll cost us \$85. Add that on, or is somebody else going to pay for that?"

"We would advertise anyway," Pat said slowly. "This is the selling time of year. We've got fertilizer, insecticides, sprayers, seeds, peat moss and many things in that ad. They'll bear their part of the ad cost. You can't charge the whole cost to the poor little rose bushes."

"No, the cost will be charged to us," Oscar said tartly. "We have to pay for the rose bushes and the ad. And the extra clerks, too."

"Nora said she would help out for free that day at the store," Pat said. "Her woman's club is going to get farm women to come in that day, as the club is interested in more beauty for all homes."

Oscar went back to his desk biting his lips and just sat there staring at his sheets of figures. What had come over the world, he thought? Years ago a farmer would come in and buy fertilizer and feed when he needed it, and you didn't have to start urging him to buy more than he could pay for. Nowadays, one had to be so nice to customers, to get them to buy stuff, to give away rose bushes to get them into the store, to run big ads.

Ach, so many merchants all they thought was how to sell more. Few figured on costs anymore, few looked to ways to cut down waste and save money. Was the whole world crazy? His head whirled at the thought. Well, as for him he would go on cutting costs. Let the rest of them go hog wild on promotions, if they wanted to. But he would continue to hold Pat down, as much as he could. Then some day when he would have a chance to buy Pat out he would run a fertilizer store sensibly, and profitably. None of these sales promotion frills for him.

He brightened at this thought of the future, when he would own the store all by himself. Ach, now, that was a dream worth thinking about and working for.

## RINGING THE CASH REGISTER

### Table Mat Advertising

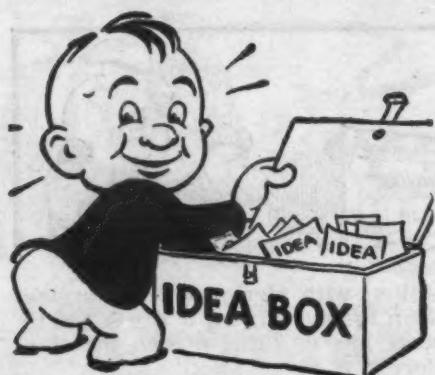
People who attend church dinners at Luther, Iowa, are given something a little extra besides food. The Farmers Cooperative Elevator Co. of Luther provides paper table mats printed with a listing of services and merchandise it has available. The mats are provided free to the churches and their use has become popular.

### New Credit Policy

Putting a strict credit policy into effect can be accomplished with a minimum of offense to all customers if the new credit policy is "sold" to customers by letter, by making no exceptions to the new policy and emphasizing increased and better service. Many dealers who have changed over to a strict 30-day credit policy say that a detailed letter is the most important factor in having the switch made with minimum of dissatisfaction. The letter should be in a friendly vein, and point out that credit is an accommodation and courtesy to the customer and emphasize that it is difficult for the dealer to pay his suppliers with cash (usually within 15 days) when he has to wait 60 or 90 days to collect from customers. The latter part of the letter could outline the new credit policy, state that charges made in one month are due by the 10th of the following month, explain that no credit will be allowed on a past due account and that 6% interest will be charged on all accounts over 60 days old. The date of the change-over should also be emphasized in the letter.

# Better Selling

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## What's New...

### In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

#### No. 6422—Brochure

A 16-page brochure about its origin, formation, operations and three subsidiaries has been published by Minerals & Chemicals Corporation of America. Also included are applications for the company's products, among which are carriers and diluents in pesticides and wettable powders, drying agents, catalysts and others. Nearly 60 pictures illustrate the text. Free copies of the brochure are available by checking No. 6422 on the coupon and mailing it to Croplife.

#### No. 6423—Applicator Kit

New literature has been prepared by the Krause Corp. on its tractor-mounted applicator for liquid fertilizer. The applicator, which comes in kit form, permits the "farmer-owner to top dress or side dress with liquid nitrogen or other solutions at the exact time and rate he desires," according to company officials. The literature states that the heart of the applicator is a hose pump which is actually 12 pumps in one. A revolving reel applies pressure to 12 short lengths of plastic hose, creating

pumping action in the same manner as milking a cow. If less than 12 outlets are required, hose may be ganged with "Y" fittings. Interchangeable sprockets provide any desired rate of application. The rate is said to remain constant regardless of ground speed, providing positive control of amounts applied. Secure more details in free literature which is available. Check No. 6423 on the coupon and drop it in the mail to Croplife.

#### No. 6424—Calcium Nitrate

A detailed booklet titled, "Calcium Nitrate for Wheat Production in the Pacific Northwest," has been printed by Wilson & Geo. Meyer & Co. The booklet, researched and written by Harley D. Jacquot, formerly with the State College of Washington, Pullman, is intended as a guide for Pacific Northwest wheat growers. Covered are such topics as need for nitrogen fertilizer for wheat, soil and climatic description in the Pacific Northwest, moisture and soil relationships, nitrogen-protein correlation, nitrogen utilization, soil fertility, cropping system, crop sequence, wheat varieties, temperature, soil moisture, time of

fertilizer applications, results of experiments and field trials and future potential needs of fertilizer. The booklet may be secured by checking No. 6424 on the coupon and dropping it in the mail to Croplife.

#### No. 5470—Truck Body

A new product of the Mid West Body & Manufacturing Co. is an all-steel farm truck body, called by the trade name, "Streamliner." Company spokesmen said that the body utilizes the "scientific forming of high strength, cold rolled steel for greater strength, longer life and less weight." Their statement continues: "The welded frame platform features 'Stiflex' construction which permits the



body to absorb off-the-road stresses and strains and yet remain grain-tight. 'Slip-on' stock racks are so designed that, in a matter of minutes one man can quickly convert the unit to a safe, sturdy livestock body, with a choice of 'swinging' or 'sliding' livestock gate. Tip-top boards may be added to increase grain capacity." More complete details may be secured by checking No. 5470 on the coupon and mailing it to this publication.

#### Send me information on the items marked:

- No. 5416—Weigh System
- No. 5448—Bag Seam
- No. 5450—Bag Sewer
- No. 5452—Insect Control
- No. 5454—Spray
- No. 5461—Bag Manuals
- No. 5470—Truck Body
- No. 6413—Coatings
- No. 6415—Pyrethrum Booklet
- No. 6416—Soil Moisture
- No. 6417—Booklet
- No. 6418—Sprayer
- No. 6419—Applicator
- No. 6420—Potash Booklet
- No. 6421—Speedometer
- No. 6422—Brochure
- No. 6423—Applicator Kit
- No. 6424—Calcium Nitrate

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS  
PERMIT NO. 2  
(Sec. 34.9,  
P. L. & R.)  
MINNEAPOLIS,  
MINN.

#### BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept.

Minneapolis 1, Minn.

#### Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

#### No. 6416—Soil Moisture

A slide film with an accompanying 25-min. recorded commentary on how soil moisture measurement works and the benefits it can provide has been prepared by the Rayturn Corp. The film deals with soil moisture-plant growth relationships and with the control of irrigation through soil moisture measurement. The slide film is available at no charge for individual meetings and at cost for permanent use. Check No. 6416 on the coupon and mail it to secure more complete details.

#### No. 6415—Booklet on Pyrethrum

"Facts for 1956 About African Pyrethrum" is the title of a booklet prepared by African Pyrethrum Development, Inc. The booklet's introduction states that the product's use as an insecticide gives qualities of quick knock-down, economy in lower concentrations with synergists, rapid dispersal and high penetration. Also included in the booklet are sections on Pyrethrum's background and how it is grown in Africa and processed from the Pyrethrum bloom, a flat white flower with a yellow center. Secure the booklet by checking No. 6415 on the coupon and dropping it in the mail to Croplife.

#### No. 6417—Educational Booklet

The Manufacturing Chemists Assn., Inc., has prepared an educational booklet in behalf of the chemical industry, entitled "Frontiersman of the Future." "Young people who are considering the field of chemistry today will have a hand in the shaping of tomorrow," according to the booklet. The contributions made by chemicals such as in fertilizers, soil conditioners, weed killers, insecticides and plant disease treatments, are described. "The demand for chemistry graduates has exceeded the supply for many years," according to the booklet. To secure the booklet check No. 6417 on the coupon and mail it to Croplife.

#### No. 6418—Sprayer

New literature has been prepared by the Spra-White Chemical Co. on its sprayer line, called by the trade name, Spray-Master SM-3KW. Company spokesmen state that the sprayer provides ample pressure and capacity to handle the spraying of trees, orchards, vineyards, parks, nurseries, roadsides, heavy brush etc., and can be used with fungicides, insecticides, herbicides and other liquids. The unit consists of a piston type pump which delivers 12 gal. per minute at 400 lb. pressure, it is claimed. Other characteristics: The unit has a single-cylinder 4-cycle air cooled 3.6 h.p. engine; pressure controller, it is portable, has mist-to-stream adjustment and a pressure variation from 30 to 800 lb. per square inch. Secure additional information and literature by checking No. 6418 on the coupon and mailing it to Croplife.

#### No. 5461—Bag Manuals

Results of research into phase of multiwall packaging are now available for reference through a series of manuals issued by the St. Regis Paper Co. The manuals are designed to aid in cutting costs by solving packaging problems, according to the Company's announcement. Handbooks issued thus far include palletizing manual, a multiwall bag papers manual and a printing manual. The palletizing manual describes how multiwall paper bags are handled as pallet and unit loads. It incorporates publications and materials made available by pallet manufacturing associations, fork lift manufacturers and others in the palletizing field. The identification and application of the various papers available for use in multiwall bag construction is outlined in the multiwall bag papers manual. To provide a working knowledge of the types of printing processes and equipment, the printing manual reports on the main methods of printing now being used. Subject material includes types, inks and paper, printing plates and multiwall bag printing. Each of the

manuals is illustrated with charts, photographs and drawings. To secure the manuals check No. 5461 on the coupon and mail it to this publication.

### No. 6413—Protective Coatings

The Shutt Process Equipment Co. announces its new system of statistical evaluation and selection of protective coatings, called the All-Coat engineered coating system. It is claimed to permit selection of optimum type of topcoat, primer and surface preparation specification, which under given environments and contemplated maintenance procedures, results in the lowest maintenance cost for an indefinite time. The basis of the system is a statistical study for the past 10 years on various corrosive environments and includes consideration of chlorinated rubber, vinyl, fish oil, alkyd-phenolics, neoprenes, bitumens, phenolics, furanes and the more recent epoxies and isocyanates. The resultant selection is said to be based on a summation of all factors which affect the total cost of a system including chemical resistance, surface preparation, thickness, labor, aging properties, coverage, cost and adhesion. Secure more complete details by checking No. 6413 on the coupon and mailing it to this publication.

### No. 5452—Insect Control

New equipment for spreading insecticides through a barn or building—called barn fogging—is announced by the Electric Sprayit division, Thomas Industries, Inc. Barn fogging equipment consists of a large sprayer which can be attached to a compressor. The company's unit, called by the trade name, Fogmaster, consists of a half-gallon Pyrotox unbreakable bottle with a four-spray nozzle of non-corrosive brass. The nozzle is capable of a 40-ft. carry in all directions and can be operated with 30 to 40 lb. of pressure, it is claimed. This model will fit all sizes and types of compressors without adaptors and will spray both water and oil base insecticides. Company officials state that the unit will keep a 70x35-ft. barn insect-free with only 10 min. spraying a day. Secure more complete details by checking No. 5452 on the coupon and mailing it to this publication.

### No. 6421—Speedometer

Details of a farm speedometer used to coordinate over-the-ground speed of farm equipment with the flow of anhydrous ammonia are available from the manufacturer, the instrument division of Stewart-Warner Corp. The company states that the unit, installed either on a tractor or rig, registers the actual speed and total distance traveled regardless of varying tire sizes, gear ratios, slippage, etc. The speedometer registers speeds up to 10 miles per hour and comes in a complete kit. To secure more details check No. 6421 on the coupon and drop it in the mail.

### No. 5448—Side Seam For Bags

A new overstitched side seam for burlap bags, which is said to eliminate raveling of loose weft yarns on the cut edges of the burlap, has been introduced by the Bemis Bro. Bag Co. The seam is called the "Edge-Lock." Loose weft yarns coming loose and mingling with the product packed has long been a problem with burlap bag users, and has become increasingly so with the growing trend toward automatic feeders, automatic

seed planters and other mechanized farm operations, according to company officials. Reports indicate that the seam completely eliminates the loose weft yarn problem, they state. Secure more complete details by checking No. 5448 on the coupon and mailing it.

### No. 6420—Potash Booklet

A new booklet, entitled, "Potash in Agriculture," has been prepared by the American Potash Institute, Inc. Single copies are available without charge but quantity shipments necessitate a charge for the actual cost of printing, according to institute officials. Sections are devoted to background information about potash, its use in plant nutrition, potash in soils, diagnosing needs, potash fertilizer materials, application, crop response and history of the product. A number of pictures and diagrams are part of the 34-page booklet. Check No. 6420 on the coupon, clip and mail it to secure the booklet.

### No. 6419—Applicator

Details of a universal hitch applicator are available from the Pollard Manufacturing Co. Company officials state that the hitch permits rear mounting the mixed liquid fertilizer applicator to all tractors, regardless of model or age. Six-row and 8-row models are available. Boom height is adjustable. Secure more complete details by checking No. 6419 on the coupon and mailing it to Croplife.

### No. 5416—Weigh Batching System

An electronic weigh batching system that will work in conjunction with IBM's punch card system has been developed by the Heltzel Steel Form and Iron Co. Called the Helco-matic Batchmaster, the unit is said to have application in the feed, grain, fertilizer, chemical and other fields. The new unit is housed in a console the size of a standard filing cabinet. Through the use of IBM punch cards, the unit automatically selects and weighs out the precise amount of any number of materials, the company states. The combinations of material weights and selections are varied and can be changed instantaneously. Where repetitive batches are required, the unit provides for automatic recycling. A moisture compensating feature is provided. A controlled closed circuit practically eliminates the possibility of malfunctioning due to vibration, moisture or dust, it is said. Push buttons for all controls are provided for manual batching of individual materials. Secure more complete details by checking No. 5416 on the coupon and mailing it.

### No. 5454—Spray

Two forms of Lindane spray for grain elevators, boxcars, granaries and flour mills are described in a new leaflet prepared by the E. H. Leitte Co. One is a 1% Lindane spray solution (ready-to-use) and the other is a 20% concentrate bin and mill spray (water miscible). Both forms are said to be effective in the control of granary weevil, rice weevil, saw-toothed grain beetle, confused flour beetle, Mediterranean flour moth, cadelle, roaches and other insect pests. Residual effectiveness is said to be from four weeks to five months. To secure the leaflet check No. 5454 on the coupon and drop it in the mail to this publication.

### No. 5450—Bag Sewer

A new product, called the model RC-100 bag sewer has been introduced by the Minneapolis Sewing Machine Co. Height adjustments to accommo-

date bags from 5 lb. to 100 lb. can be made. The height of the sewing head and conveyor height can also be regulated to conform with the operator's most comfortable sewing position. The model is equipped with a cast aluminum sewing head that sews paper, cotton or burlap. The standard model has a 6-ft. conveyor from center to center of pulleys. The machine is 5 ft. high and 3 ft. wide. To secure more complete details check No. 5450 on the coupon and drop it in the mail.

### HORTICULTURISTS TO MEET

MADDOCK, N.D.—Annual meeting of the North Dakota Horticultural Society will be held in Madock June 28 and 29.

### West Virginia Field Day Scheduled June 22

MORGANTOWN, W.VA.—Plans for the agronomy day program to be held at the Reynmann Memorial Experimental Farms at Wardensville, W.Va. June 22, have been completed.

Ten research projects will be featured in the agronomy day program. Visitors will tour the research plots and see experiments dealing with anhydrous ammonia applications on pasture; preplant applications of anhydrous ammonia on corn; deep-tillage applications of fertilizer for corn; rates of seeding corn; supplemental irrigation for small grains; variety trials with spring oats, clover varieties, barley, winter wheat, winter oats and corn hybrids.

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When your customers can measure the growth and can see a superior result from using a "HORSE & LION" nitrogen fertilizer... you can soon measure the increase in your sale of these great products. Proven the world over, "HORSE & LION" nitrogens are practical, effective. There are five types, for various requirements:

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"Horse & Lion" Ammonium Sulphate Nitrate: 26% pure nitrogen (11% nitric and 15% ammonic nitrogen). Granulated.

"Horse & Lion" Urea 44": 44% pure nitrogen. Coated pellets for dry use.

"Horse & Lion" Urea 46": 46% pure nitrogen. Pellets without coating for liquid application or dry use where fast dissolving desired.



For complete information and prices, contact your nearest "HORSE & LION" fertilizer headquarters.

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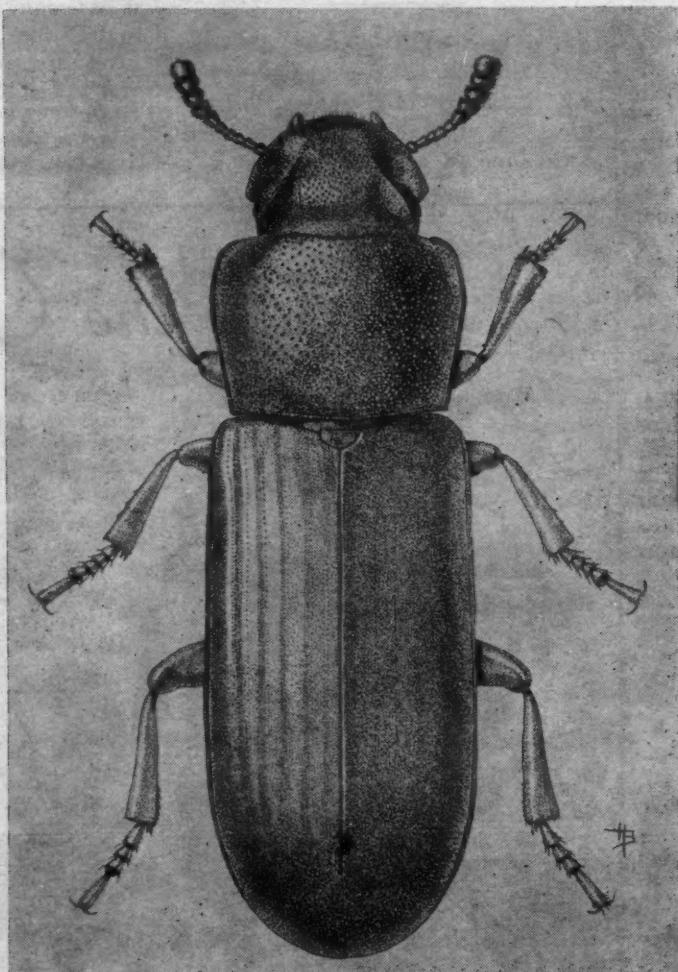
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## BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



### How to Identify

The confused flour beetle is very similar in appearance to the red flour beetle, but is more abundant, particularly in the northern part of the U.S. The adult (shown here) is approximately 1/7th inch long. Larvae are brownish, somewhat flattened, six-legged and worm-like creatures. Flour millers often refer to the latter as "bran bugs" because of the presence of this pest in all kinds of wheat and grain.

### Habits of the Flour Beetle

In from five to twelve days after eggs are laid, small, brownish-white worms are hatched, which become full-grown in from two to four months. The variation of time depends upon the prevailing temperature and the type of food available for them to eat. These worms turn to white pupae and remain in this stage for several weeks. When adults, they are very active bugs, able to run swiftly when disturbed. The female is quite prolific, being capable of producing some 1,000 eggs during the two years she may survive if the winters are relatively moderate. (These eggs are laid

## Confused Flour Beetle

in cracks in the building or directly on the food material . . . they hatch in less than two weeks.)

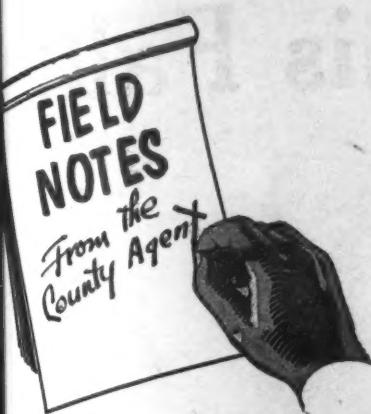
### Damage Done by the Beetle

Flour beetles are said to devour at least their own weight of food each week, and their larvae destroy many times their own weight of food while they are developing. Since the beetle feeds on many varieties of grain, flour, starchy materials such as beans and peas, the damage they do is considerable. This particular bug has been known in the U.S. since 1893 and the economic loss it has caused since that time would be difficult to calculate. The beetle, being one of the most common occurring where grain products are stored, has the opportunity to do great damage. Its name, incidentally, refers to the bug's anatomical makeup, not to any allusion to its being a "mixed up" insect.

### Control of Flour Beetle

Both corrective and preventive methods of control are available through various fumigants and non-toxic insecticides. Specific information on control of these beetles is available through state experiment stations and county agents.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.



By RAYMOND ROSSON  
County Agent, Washington County, Tenn.

We live in a changing world. The other day I met a man who had really made good farming. He'd been at it for quite a while, and I asked him about the changes in agriculture.

He said, "Success in farming depends in a large measure on the wise use of land, with adjustments to meet changing economic conditions. Each farmer must plan the operation on his own farm. The major purpose of research in agriculture is to discover means to aid farmers in meeting their problems and if the farmer can be helped by research, that in turn helps business or industry. The applications of research must however be made by farmers."

Yes, it's different in 1956. Fifty years ago Uncle Tom and Uncle Joe were young men then. Now young Tom and young Joe must realize that there are a lot of changes to be reckoned with, such as the effect of wars, growth of population, higher productivity of labor, industrial lags, regional specialization, unemployment, higher wage rates in organized labor, more tractors and fewer horses, new tillage and harvesting implements, much better fertilizers and insecticides, rural electrification, diseases and parasites, artificial insemination, hybrids, quick freeze, plastics, vegetable oils, starch, fuels, demands for different foods, fluctuating prices, eight rates, autos and trucks, export markets, size of farm units, part time farming, farm credits, tenure, leisure time, schools and churches, homes, art and health.

The individual farm family, can solve some of these problems, but others, far reaching in scope, must be solved by groups of farmers, thinking, planning and working together. They need the help that research and educational agencies can give, plus the aid of many interested statesmen.

The solution cannot be wrought quickly or easily. In short, if farm people are to live as they deserve, society must face the problems that the times have brought to our land and its people. It is a job for real men and women who appreciate its significance.

## NEWS NOTES

(Continued from page 11)

of crops. This area from a viewpoint of location with respect to markets, climate, soils, transportation facilities, etc., does offer an excellent potential for the production of a number of cash crops."

Mr. Snyder summed up: "While a large variety of crops can be grown satisfactorily in the Connecticut Valley area we might suggest those crops now grown on a substantial acreage basis be increased in order to produce sufficient volume to cover a variety of market outlets. These crops are potatoes, asparagus, cucumbers, onions, sweet corn, carrots, parsnips, squash, tomatoes and in the hill areas spinach, lettuce, cauliflower and broccoli."

## PENNSYLVANIA DEALER

(Continued from page 11)

ment of the Midway Mills about eight years ago. Prior to that time, he was a representative for a commercial feed company. Feeling that it only took some good merchandising to make a success for any dealer, Mr. Potter bought out this mill while it was in the red. And during the time since he acquired it, he has had to enlarge his operations, added more help and has put it definitely in the black.

Mr. Potter only serves customers in a seven mile radius that insures immediate service and low cost deliveries. He feels that there is enough business to be had in his own backyard and that chasing over several

counties would only add costs and expense to the delivery of his fertilizers. He operates three trucks and routes them so that they make the most of their delivery time.

"We start promoting fertilizer business several weeks before the farmer even starts working on his fields," says Mr. Potter. "This gives us enough time to become personally acquainted with the individuals who we are after for customers, to learn their problems and promote our fertilizers. Then we start sending out literature on plant raising and fertilizer to add to the farmer's interest. By the time the season rolls around, we have a pretty good start on making sales."

Mr. Potter feels that too many dealers wait until the last minute or don't go out for fertilizer business at all, waiting for it to come in. A drawback to this situation is that the

## Better Selling

Richer Sales Fields for Dealers

farmer may travel some distance to buy fertilizer on his own because he has received a price offer. This naturally cuts out the local dealer from this business. So even if the farmer can get it for less elsewhere, pointing out the service the local dealer can give him helps to overcome this.

### FIELD DAY

NEW HAVEN, CONN.—Date of the Connecticut agricultural experiment station field day has been changed to August 15, Neely Turner, vice director of the station, has reported. The field day is held at the Station's 55-acre experimental farm in the Mt. Carmel section of Hamden.

With J. Peter Johnson, department of entomology, as chairman, a committee is planning the program, which includes an address, exhibits and the tractor tours to experimental plots.



## Parathion's Power is Now available at new Levels of Plant Safety, Convenience and Economy!

Stauffer's "Flowable" Parathion 400\* is a water emulsion... it eliminates the hazards of breathing dust... offers no possibility of phytotoxicity or off-flavors from inert or solvent residues. If spilled or splashed, it washes easily from skin or clothing... and it is harmless to any type of spraying equipment.

"Flowable" Parathion 400 is an exclusive Stauffer product, free of dust... free of oil or solvent... free of abrasive solids... it gives you all of Parathion's power and a minimum of its disadvantages.

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may be substituted for any parathion spray or dust formulation at equivalent dosages, yet wetting is excellent and there is no residue to mar appearance.

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**MEMO**

TO: Advertisers to the Fertilizer Industry  
 SUBJECT: **CROPLIFE's Fall Fertilization**  
**Special Issue of July 23**

Every advertiser interested in the fertilizer industry has a big stake in the promotion of fall fertilization. CROPLIFE, the only weekly newspaper serving the agricultural chemical industry, will publish a special "FALL FERTILIZATION" issue—July 23, 1956—which will editorially feature this important subject, and provide an unprecedented opportunity to place before the industry and midwest dealers your advertising message!

Here's a capsule preview of this special issue:

**Fall Fertilization:** discussion of economic advantages and agronomic aspects involved in fall application . . . of problems faced by industry in trying to manufacture and store adequate amounts of plant food materials and then attempting to deliver year's output in brief spring period . . . photos showing spring jam of trucks and farmers "fighting" for supplies of fertilizer . . . plus tie-in editorial comment on wastefulness of this buying pattern . . . a graphic presentation of Dr. Firman E. Bear's map showing areas where soil is adaptable to fertilizer application in the fall.

**Agronomists Express Viewpoints:** statements of college and industry agronomists on fall fertilization.

**Directory of Available Sales Helps:** special section of July 23 CROPLIFE will feature an illustrated "catalog" of sales aids available to dealers from fertilizer suppliers . . . descriptions of materials geared to help dealers promote fall application of fertilizers . . . sources of newspaper ad mats, store banners, window decals, mailing pieces, counter displays and allied point-of-sale material.

**Question-and-Answer Feature:** dealer-readers of the July 23 CROPLIFE will find accurate replies to questions and/or objections of farmers on fall fertilization in a comprehensive "question-and-answer" page.

**How One Dealer's Idea Clicked:** one of the highlights of CROPLIFE's "Fall Fertilization" issue will be an attention-compelling article—a true "success story"—of the unique ways a Midwest dealer promoted sale and application of fertilizer during fall months.

## PLAN YOUR ADVERTISING NOW!

Plan your advertising now for CROPLIFE's special "FALL FERTILIZATION" issue! An unusual opportunity to tie-in with great news and feature coverage of a timely and important subject. Contact your nearest CROPLIFE office for complete details and any service our sales representatives can offer.

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DATE OF ISSUE: July 23, 1956

ADVERTISING DEADLINE: July 9 (Monday)

Letters from USDA Commodity Control Board, on the subject of residue regulations. These should not exceed three times what its fumigation should not be. It appears fully understood that the Miller Act tolerances of 1956 established components of all grain just happened to receive the other constant chemicals. These tolerances were set at a level residues will consuming those set upon to be the normal treatment somebody, so in government concluded with methyl bromide treatment. The fact that is set on the amount rather than effects upon the various tolerance on application is 25 p.p.m.; on cotton it is 250 p.p.m. and for grain it is 500 p.p.m. sweet potato on seed it represents weight of grain residues. As stated happens to be fumigants to cover the Miller Act now and July 23, 1956, tolerances will be used grain carbon tetrachloride, carbonyl sulfide, etc. These tolerances you may expect a limit of some of the fumigant effect will be required to remove fumigant residue. J. Carl St. Louis Nitrogen Fertilizers in Corn PORTLAND Fertilizers do not have a nitrogen program proposition Marion County spring barley in average of 30 lb. application of nitrogen, and spring barley field plots located Willamette Valley and five oat varieties over two years. State College, is in charge. In a few instances can be applied sulfur, but does the quantity come from nitrogen application on an acre has resulted in some increase in yield.

## Reader Views

Letters from various offices of the USDA Commodity Stabilization Service, on the subject of "Methyl Bromide Residues" are being widely circulated, and quoted in trade publications. These letters suggest that grain should not be treated more than three times with methyl bromide, or if its fumigation history is not known, should not be treated at all.

It appears that many who do not fully understand the Miller Amendment to the Federal Food and Drug Law are misconstruing these letters. The Miller Amendment provides for tolerances of pesticide residues to be set by the FDA on all raw agricultural commodities. Between now and July 22, 1956, such tolerances will be established on all chemical components of all grain fumigant mixtures. It just happens that methyl bromide has received its tolerance ahead of the other commonly used grain fumigant chemicals.

These tolerances are not necessarily set at a point above which the residues will be harmful to people consuming the food. They are primarily set upon what may be expected to be the normal residue following normal treatment; and apparently somebody, somewhere along the line in government or industry erroneously concluded that three fumigations with methyl bromide represented normal treatment of grain.

The fact that the residue tolerance is set on the basis of normal treatment rather than toxicity, or harmful effects upon people, is illustrated by the variation in the tolerance on the various commodities. The tolerance on apples, pears and quince is 5 p.p.m.; on egg plant, onions and tomatoes it is 20 p.p.m.; on beets, rutabagas and turnips it is 30 p.p.m.; on grain it is 50 p.p.m.; on potatoes and sweet potatoes, 75 p.p.m., and on cotton seed it is 200 p.p.m.—all of which represents what is alleged to be normal residues following normal treatment.

As stated earlier, methyl bromide happens to be among the first of the fumigants to receive its tolerance under the Miller Amendment. Between now and July 22, 1956, residue tolerances will be set for such commonly used grain fumigant chemicals as carbon tetrachloride, ethylene dichloride, carbon bisulfide, and others. As these tolerances are established, you may expect the tolerance to also set a limit on the extent of the use of some of these materials. The ultimate effect of the Miller Amendment will be to require more care in the use of fumigants on grain, regardless of the fumigant that may be involved.

J. Carl Dawson  
J. Carl Dawson & Associates  
St. Louis, Mo.

### Nitrogen Boosts Grain Yields in Oregon Trials

PORLAND, ORE.—Nitrogen fertilizers do not complete a spring grain fertility program, but they are a paying proposition says Hollis Ottawa, Marion County extension agent. Spring barley yields have been raised in average of 524 lb. per acre, with 30 lb. application of available nitrogen, and spring oats by 582 lb. These figures were obtained from field plots located in eighteen different Willamette Valley barley fields and five oat fields during the last two years. Tom Jackson, Oregon State College soil conservation specialist, is in charge of the field plot work.

In a few instances, the above increases can be contributed partially to sulfur, but for all practical purposes the quarter-ton increase has come from nitrogen. The thirty pound application costing from \$3.50 to \$4 per acre has resulted in \$8 to \$12 increase per acre for the farmer.

### California Sales Dip in First Quarter

SACRAMENTO—Fertilizer sales in California during the quarter ended March 31 totaled 280,853 tons, compared with 283,155 tons in a corresponding period a year earlier, according to the State Department of Agriculture.

The total for the 1956 quarter included 61,494 tons of mixed dry fertilizer, a decline from 67,334 tons in the first quarter of 1955.

Of the materials, ammonia solution 20-0-0 increased from 29,831 tons in the first quarter of 1955 to 39,758 tons in the first quarter of 1956; anhydrous ammonia gained from 11,060 tons to 12,904 tons; liquid mixed fertilizers from 5,353 tons to 8,117 tons; urea from 5,011 tons to 7,108 tons and treble superphosphate from 3,338 tons to 4,109 tons.

Ammonium sulfate led the list of materials in the 1956 quarter with 45,702 tons, down from 60,584 tons in the first quarter of 1955.



Charles Polstra

James H. Lyon

John Thiessen

**BURROWS APPOINTMENTS**—James H. Lyon has been named sales manager of Burrows Equipment Co., Evanston, Ill., it has been announced by Parke W. Burrows, president of the firm. Also announced at the same time was the appointment of John Thiessen as the Burrows representative for central Illinois and Charles Polstra as administrative assistant in the Evanson office.

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FERTILIZERS  
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with sufficient potash



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## Soil Injection of Herbicides Shows Good Tree Kill

**COLLEGE STATION, TEXAS**—Kills averaging 75% or more of trees treated by soil injection of herbicides have been obtained in experimental work at Texas A&M College, according to a report by Wayne G. McCullum, assistant professor, department of range and forestry.

This method, in which the herbicide solution is placed in the soil at the base of a brush plant, results in a lower per-plant cost of materials than does spraying the trunk base, because a lower concentration of herbicide can be used, Mr. McCullum reports.

He offers these suggestions for the soil injection method:

Apply to trees with trunks less than 8 inches in diameter near ground level.

Make the treatment during the

spring or early summer when the soil is moist and the brush plants are growing.

Use a volume for each tree of not less than 2 ounces per inch of trunk diameter.

Apply oil solution of 2,4,5-T containing 8 lb. acid equivalent per 100 gallons, or 6 to 8 lb. active ingredient of Karmex W or Karmex FW per 100 gallons of water. Water dilutions of 2,4,5-T should not be used.

Place the materials in contact with the underground parts of the plant.

Post and blackjack oak, elm, honey locust and gum elastic were killed with this method. Its effect on other plants should be tested before large-scale applications are made.

### CONTROL HAMPERED

**BLACKSBURG, VA.**—The unavailability of custom spraying service and of suitable sprayers on the farm is hampering the control of the alfalfa weevil in some areas in Virginia, reports Dr. J. O. Rowell, entomologist at Virginia Polytechnic Institute.

## Improved Range Pastures Boosts Lamb Production

**HOPLAND, CAL.**—Improved range pastures have produced nearly 70 lb. more lamb per acre than unimproved rangeland so far during 1956, according to studies at the Hopland Field Station of the University of California.

Fertilized pastures have produced 81 lb. of lamb per acre, agronomist Milton B. Jones told some 200 ranchers and sheep men attending the annual field day at the range research station in May. Native range produced only 12 lb. of lamb per acre.

The improved pastures were seeded to perennial grasses and legumes in 1952 and fertilized with nitrogen and phosphate each fall, Mr. Jones said.

The day-long program on the Hopland range was devoted to reports on the University research on sheep production, range improvement and watershed studies.

## Growth Projection For Olin Mathieson Presented by Executive

**BOSTON**—John W. Hanes, chairman of the finance committee, Olin Mathieson Chemical Corp., said May 23 the corporation's sales volume could climb to \$1,200,000,000 in 1960, 115% higher than 1955 totals; and pre-tax profits in five years could reach \$229,000,000 up 179% from 1955.

Mr. Hanes stressed that these projections reflected the "best thinking of Olin Mathieson executives and cautioned that "changing economic factors, new competitive pressures, technological advances and the like" can alter any program spread over 5 months.

Speaking in the Sheraton Plaza at the annual convention of the National Federation of Financial Analysts, Mr. Hanes explained that an expected increase in pre-tax profits reflects an improvement in pre-tax profit ratio to sales from 14.7% in 1955 to 19% in 1960. "Much of the improvement in profit ratios comes from the planned expansion of high-profit ratios—particularly aluminum," he said.

This expected growth, Mr. Hanes said, will be based solely on internal expansion. "I have stated before emphatically," Mr. Hanes continued, "that the era of mergers and acquisitions has ended. No new shares will be issued. Either the business will be developed from within, or we will stay out of it," he declared. The financial analysts were told that exceptions to this philosophy will be "few and far between" and, in any event, anything acquired will be acquired for cash or for stock already issued.

The corporation's projected growth in net plant property and equipment was outlined by Mr. Hanes. He held expectations that net plant property and equipment value would rise to \$583,000,000 by the end of 1960 from \$311,000,000 at the end of 1955—a gain of 88%. Working capital growth was estimated by Mr. Hanes to be just under 40% in 1955 from \$194,000,000 to \$270,000,000 in 1960.

The analysts were informed that Olin Mathieson's net profits are projected to improve from \$44,600,000 in 1955 to \$111,400,000 in 1960—an improvement of nearly 150%. The cash profit for the same period is projected to improve from 1955's \$60,600,000 to 1960's \$149,600,000—again an improvement of 150%.

Not included in these cash profits, Mr. Hanes explained, is an additional \$39,100,000 which will be generated from tax savings attributable to accelerated depreciation, and \$30,000,000 is generated from the sale of timber lands.

In noting that growth of the corporation would be stimulated from internal expansion, Mr. Hanes pointed to six major segments which comprise the areas of operation of the corporation and assigned to them their percentage of the total that makes up the entire corporation. He said Winchester Western and explosives would comprise 18.5% of over-all operations; metals—12.3%; drugs and pharmaceuticals—17.2%; film, paper and forest products—12.8%; plant foods and phosphates—18.2%; and industrial chemicals—20.9%. These percentages include overseas as well as domestic operations.

### GRASSLANDS TOUR

**PORTLAND, ORE.**—The fifth annual grasslands tour, sponsored by the agricultural committee, Portland Chamber of Commerce, will be held June 11-13, announces John Hooper, chairman. This year's tour will be centered around visits to North Central Oregon and Central Washington, including Klickitat, Yakima and Kittitas counties.

# New Strength-end<sup>\*</sup> Bemis Multiwalls

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### STRONGER AT THE RIGHT PLACES

New Bemis Strength-End Multiwalls, strengthened top and bottom where most sewn bag breakage is experienced, will cut packing troubles and costs for you.

### TWO WAYS TO SAVE

You'll save money one of these two ways with Bemis Strength-End Multiwalls: You may switch from a more expensive type of shipping container. Or, if you are already using multiwalls, you might use bags with fewer plies, because of the greater end strength, where it is needed. Bemis Strength-End Multiwalls may, at lower cost, do your job as well or better.

### SUCCESSFULLY TESTED

Bemis Strength-End Multiwalls have been successfully tested in all sections of the country and under all climatic conditions. They have proved themselves for packing cement, fertilizer, chemicals, flour, salt.

### Here's how it's reinforced

The reinforcement in Bemis Strength-End Multiwalls is a strip of sturdy kraft, several inches wide, running horizontally around the bag at the ends... anchored to the other walls so it works in conjunction with them... and adding greatly to the strength both at the sewing line and at the gusset corners. It's just plain, common-sense, balanced strength construction.

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Get the complete story about Bemis Strength-End Multiwalls from your Bemis Man.

**Bemis**



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## FERTILIZER

(Continued from page 1)

North Carolina, traditionally the leader, 1,791,258 tons; Florida, 1,501; Georgia, 1,299,654; Indiana, 509,942; Ohio, 1,088,467, and Alabama, 1,039,160.

Percentagewise New Mexico showed the greatest increase in 1955 over 1954, a gain of 21.8%.

Figures used in this report are for the calendar year 1955. The official U.S. Department of Agriculture fertilizer consumption reports are for fiscal years ending June 30.

This report also differs from the USDA report in that tonnages of certain materials are not included to the extent that it has been possible to eliminate them from available information. Materials excluded are limestone, phosphate rock, colloidal phosphate, basic slag, secondary and trace elements, gypsum, sulfur and other soil amendments.

FERTILIZER CONSUMPTION BY REGIONS 1954 and 1955, in short tons		
	1954	1955
New England .....	423,408	432,278
Middle Atlantic .....	1,549,930	1,575,320
West north central .....	4,083,864	4,056,342
West north central .....	2,070,373	1,950,262
South Atlantic .....	6,598,710	6,743,630
South central .....	4,486,157	4,006,214
Western .....	1,466,584	1,652,364

## SPRAY CONTRACT

(Continued from page 1)

ment of Agriculture and the state plant board of Florida. A bill passed by Congress carried an appropriation of more than \$2 million for federal participation in the fight against the invading fruit and vegetable pest. Of this amount, \$1½ million is immediately available.

Since finding the first Medfly in April, state-federal eradication efforts have gone forward in three-pronged attack. Control and quarantine workers (1) trap widely to locate the flies; (2) spray vegetation and treat soil repeatedly with insecticides to kill the flies; and (3) enforce quarantine regulations aimed at preventing spread to fruit-fly free areas. A state quarantine prohibits movement of any untreated material likely to harbor the pest from Dade, Broward and Palm Beach counties to other parts of Florida.

Some 3,500 fruit fly traps, shipped from Texas, are already in use in the detection survey program. These traps are distributed at strategic points throughout the state. An additional 10,000 are being supplied to the area as fast as glass-blowers can produce them.

Day-to-day findings of the detection survey are released by the state plant board at Gainesville, Fla. Identifications are made in the ARS entomology research branch. As a result of the survey work spot infestations, as of May 29, had been found at Loxahatchee and Belle Glade, in Palm Beach County; Denaud, Hendry County; Immokalee, Collier County; Englewood, Sarasota County; Hicoria and Lake Placid, in Highlands County, and in Polk County. Sometimes only one fly may be picked up in an isolated area, but it is indicative of the presence of the pest. These outlying spot infestations are being sprayed as rapidly as they are found, usually within hours after discovery.

## Hearing Scheduled in California on use of Herbicides

SACRAMENTO—The California Department of Agriculture has announced a public hearing to be held in the County Bldg. at Firebaugh,

Cal., at 10:00 a.m., June 14 to discuss changes in regulations governing use of herbicides.

The hearing is being held in response to petitions from farmers who requested three changes in the regulations. The proposals would include additional portions of Merced and Fresno counties near Dos Palos in that portion of the state defined as a hazardous area and would remove the Tehachapi-Cummings area of Kern County from the hazardous area. The effect of the proposed changes would be to ease restrictions on use of 2,4-D in some portions of the state and to tighten them in others.

The hearing also will consider the proposal that aircraft operators be allowed to apply 2,4-D in less than ten gallons of spray per acre in the hazardous area. Current regulations require aircraft operators to apply at least ten gallons of spray per acre.

Allen B. Lemmon, chief of the Department's Bureau of Chemistry, will conduct the hearing.

## MEETING ON THIS WEEK

WHITE SULPHUR SPRINGS, W.VA.—More than a thousand registrants were expected to gather at the Greenbrier Hotel here this week (June 10-13) to attend the annual convention of the National Plant Food Institute. Speakers named on pre-convention announcements included Sen. J. W. Fulbright (D., Ark.); Dr. Russell Coleman, executive vice president of the Institute; Drs. J. M. Bohlen and G. M. Beal, Iowa State College, Ames; and Glenn R. Fouche, Stayform Company, Chicago. A presentation of "Soil Builders Award for Editors" was to be made, and a premiere showing of the Institute's new movie, "What's in the Bag" was on the schedule. Another movie, a time-lapse film entitled "Seeing Plants Feed," was to be presented by John Ott, Winnetka, Ill. A full report of the Greenbrier meeting is expected to appear in Croplife's issue of June 18.

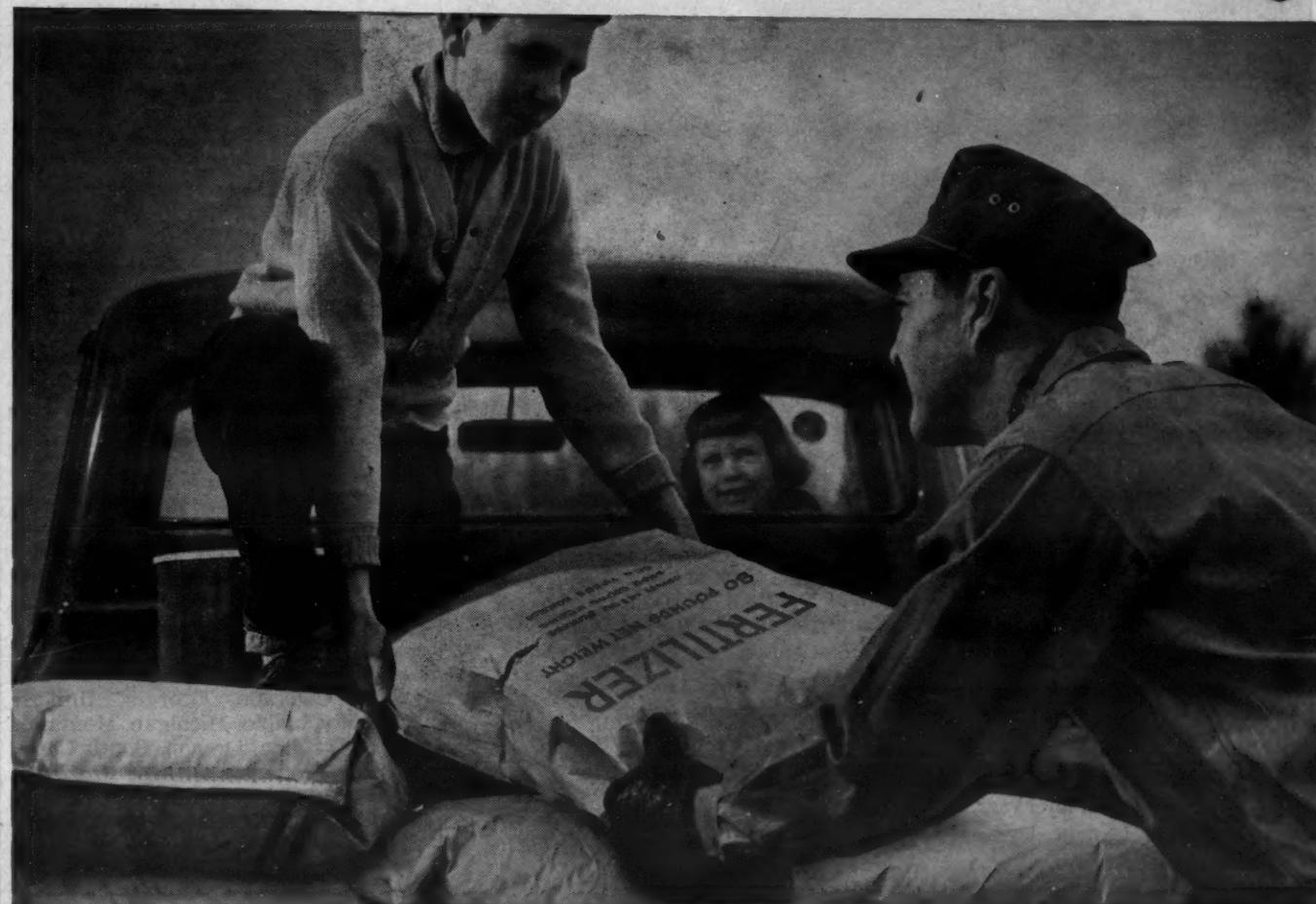
## Another Adult Mexican Fruit Fly Found in California

SACRAMENTO—A second adult Mexican fruit fly has been found on the California side of the Mexican border near San Ysidro near the spot the first fly was found in August,

1954. San Ysidro is in San Diego County not far from the international boundary.

Following the trapping of the second fly poison bait was distributed over the area. Sprays have been applied every three weeks over a five-mile strip extending for 40 miles inland along the border. Similar treatments have been applied in the Calexico neighborhood.

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## FERTILIZER-PESTICIDES

(Continued from page 1)

Indiana, Iowa, Montana, Nebraska, and North Carolina. A number of the states failed to make reply to this question. These included Delaware, New Mexico, New York, Ohio, Texas, Utah, and West Virginia.

Indiana said that fertilizer-pesticide mixtures must be registered with the state chemist and must comply with the established labeling regulations. Vermont indicated that the question has never been brought up.

Puerto Rico comments that "only custom mixes sold at present. Registration is pending legal interpretation on the applicability of certain dispositions of our pesticide law and the registrations to custom mixes."

**Q.—Do you collect a regular fee under your pesticide law?**

Many of the states indicate that they do collect the regular fee under the pesticide law. However, some say they do not. The states that report negatively are Florida, Illinois, Indiana, Iowa, Montana, Nebraska, North Carolina and South Carolina. Vermont comments that individual components must comply.

**Q.—Name the pesticides which are generally used in mixtures for food crops in your state.**

Aldrin, Dieldrin, Chlordane and Heptachlor appeared most regularly in the answers to this question.

Aldrin was named by Alabama, Arkansas, California, Colorado, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Nebraska, New Jersey, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, Virginia, Washington and Canada.

Heptachlor was named by California, Georgia, Kansas, Kentucky, Minnesota, Nebraska, North Carolina, South Carolina, Tennessee, Virginia and Washington.

Chlordane was mentioned by California, Colorado, Georgia, Illinois, Kentucky, Maine, Michigan, Montana, North Carolina, Oregon, South Carolina and Tennessee. Dieldrin was mentioned by Colorado, Georgia, North Carolina, Oklahoma, South Dakota, South Carolina and Tennessee.

Other materials mentioned included Toxaphene, Zineb, DDT, Lindane, Parathion, BHC and IPC.

**Q.—Does your state experiment station recommend fertilizer-pesticide mixtures?**

Answering "yes" to this question were Alabama, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Michigan, Minnesota, Nebraska, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Virginia, Washington, West Virginia, Wisconsin and Canada.

States answering "no" were California, Colorado, Delaware, Florida, Maryland, Mississippi, Montana, New Jersey, North Carolina and Ohio.

Failing to reply were Arizona, Connecticut, Idaho, Massachusetts, Missouri, New Hampshire, New Mexico,

New York, North Dakota, Rhode Island, Texas, Utah, Wyoming and Hawaii.

Arkansas notes that "state experiment station results so far are indeterminate. No recommendation made." Kentucky says, "yes, with reservations." Oregon reports that recommendations are made for experimental use only. Vermont commented that "this could be allowed, but to our knowledge has never been requested or done."

**Q.—Do you limit registration and distribution of fertilizer-pesticide mixtures to those mixtures recommended by the state experiment station?**

The lineup here seems to be largely negative. A relatively few states indicate that they do limit their registration of fertilizer-pesticide mixtures those recommended by the state experiment station. States that make such limitations include Alabama, Indiana, Kansas, Kentucky, Michigan, South Dakota, Virginia and Canada.

Louisiana says that "so far our experiment station has recommended only one fertilizer-pesticide mixture to be used on one crop only namely, an approved fertilizer grade and Aldrin to be used on sweet potatoes only." Maine comments that mixtures must be recommended and approved.

In Mississippi pesticides are accepted only in accepted fertilizer grade. Tennessee comments that "we have accepted registration on certain mixtures recommended by the experiment station; however, other mixtures not recommended have been registered. At present, we are requesting that they make more extensive recommendations to us." The state of Washington says, "We have a wide diversity of crops, soils, climate, etc., and the experiment stations' tests do not cope with all the need. However, our department's acceptance does not constitute a recommendation."

**Q.—Have you issued regulations covering the sale and distribution of these mixtures?**

Most of the states reporting indicated they have issued no specific regulations to control such mixtures. A few indicated that such regulations have been made. Among those indicating that they do have such regulations are Florida, Georgia, Illinois, Indiana, Kentucky, Maryland, Michigan, Mississippi, North Carolina, South Carolina, Tennessee and Virginia.

Michigan comments that "regulations permitting the use of fertilizer-pesticide mixtures were adopted in 1955 in close accord to Virginia regulations." The state control official also comments that "mixtures are subject to all requirements of both fertilizer and pesticide laws and must be registered under both laws."

**Q.—Do you permit sale in bulk?**

The lineups here were fairly well divided. Those indicating that they do not permit sales in bulk were California, Florida, Georgia, Illinois, Iowa, Maryland, Michigan, Mississippi, Oklahoma, Oregon, Pennsylvania, South Dakota and Vermont.

**Q.—Do you permit sale in woven bags?**

Opinion in this regard seems to be fairly well divided. States that do permit sale of mixtures in woven bags are Arkansas, California, Delaware, Iowa, Louisiana, Minnesota, Nebraska, New Jersey, Ohio, Pennsylvania, South Carolina, Washington, West Virginia, Wisconsin, Canada and Puerto Rico.

**Q.—Do you require that mixtures be distributed in heavy paper containers?**

As might be expected in the lineups to the previous question,

tion was well divided in this category also. States that require mixtures to be distributed in heavy paper containers are Colorado, Georgia, Illinois, Kentucky, Maryland, Michigan, Mississippi, Nebraska, New Hampshire, Oklahoma, South Dakota, Tennessee and Virginia.

Kansas comments that such is not required but is recommended. Maine says that all mixtures are distributed in paper bags. Montana says that "our present fertilizer law does not specifically cover these mixtures. We have no regulations. We check to be sure that the label carries the ingredients statement with direction for use."

North Carolina says, "All sold in paper bags." Oregon says, "no regulations but so far as known, all sales have been in paper bags." Somewhat the same is stated by Wisconsin which says, "no regulations, but all mixtures are distributed in paper bags."

**Do you require a label showing an ingredient statement for both fertilizers and pesticides?**

Most of the states answered yes to this question. The exceptions, those which indicated "no," are Delaware, Florida, Vermont, West Virginia and Canada.

**Do you require directions for use?**

Again, most of the states replied that such directions are required. The exceptions, those who state that directions are not required, are Delaware, Florida, North Carolina, Pennsylvania, Vermont and West Virginia.

**Do you require warning statement?**

Most of the replying states indicated that warnings are required. A large percentage of the states say that such are mandatory. Here are those who said they do not require warnings: Delaware, New Jersey, North Carolina, Pennsylvania, Vermont and West Virginia.

**Are sales under the previous question subject to regulation under fertilizer and pesticide law?**

A large proportion of the states indicate that buyers mixture sales are subject to regulations under fertilizer and pesticide laws. The states where this condition exists are Arkansas, California, Georgia, Iowa, Kansas, Kentucky, Louisiana, Maine, Minnesota, Mississippi, New Hampshire, New Jersey, Oklahoma, South Carolina, South Dakota, Washington, Canada and Puerto Rico.

**Do you require a special tag?**

Opinions here are fairly evenly divided. States indicating that they do require a special tag are Alabama, Florida, Georgia, Illinois, Iowa, Louisiana, Michigan, Mississippi, North Carolina, Oregon, South Carolina, Tennessee and Canada.

Minnesota says that each product requires a complete label which can be a tag or otherwise, and that the tag is optional.

Washington says that the economic poison (pesticide) label takes precedence over the fertilizer label. However, each bag or container must have both labels attached.

**Have you established tolerances for deficiency or excess of pesticide?**

Not many of the states reporting have laws that cover this type of situation. However, those who have established tolerances for either deficiency or excess of pesticides are California, Oklahoma, South Carolina and Virginia.

Maine comments that the same tolerances apply as under the pesticide law. Washington says, "a tolerance used, but it is not published, as it varies as to item and strength guaranteed."

**Q.—Do you analyze fertilizer-pesticide mixtures for fertilizer?**

Practically every state indicated that it does analyze these mixtures for fertilizer. Exceptions are North Carolina and South Dakota.

**Q.—Do you analyze fertilizer-pesticide mixtures for pesticides?**

There is no particular pattern evident in the replies to this question. The following states indicate that they do test mixtures for pesticides: Arkansas, California, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, New Jersey, North Dakota, Oklahoma, Oregon, South Carolina, Tennessee, Virginia, Washington, Wisconsin and Canada.

**Q.—Do you permit the sale of lime or gypsum mixed with pesticides?**

States indicating that they do permit such sales are Delaware, Florida,

Iowa, Nebraska, Oregon, Pennsylvania, Washington and West Virginia.

A number of comments were made by the various states on this question. Alabama says that no request for such mixtures have been made. Arkansas states that the problem has never arisen. It adds, however, that "if properly labeled, permission would be given provided same was an effective formulation."

California says that such must be registered. Colorado reports that "such mixtures not sold in Colorado."

Kansas says that no law covering gypsum or lime applies in that state. There is no record of such mixtures, it says. Louisiana says, "these products are not covered by laws." Maine reports that no requests have been made for this.

Maryland says, "we have not encountered this." Minnesota says, "yes, but no such products have been submitted for registration." Mississippi: "yes, if compatible."

Montana says that registration has

not been requested as yet. The same comment is made by New Jersey, North Carolina, Ohio, Tennessee and Puerto Rico.

Oklahoma comments as follows: "The sale of lime or gypsum is not covered by the Fertilizer law and it would not be permitted to be sold under the pesticide law unless it was previously determined that the lime or gypsum would not cause the pesticide to be less effective."

**Q.—Do you permit "buyers mixtures" or "farmers mixtures" whereby a farmer may have any pesticide added to his fertilizer by the manufacturer?**

Laws in the various states differ somewhat in this category, also. Many of the states do permit such "buyers mixtures." These are Alabama, Arkansas, California, Colorado, Delaware, Iowa, Kentucky, Maine, Nebraska, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South

(Continued on page 24)

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**MIXTURES**

(Continued from page 23)

Carolina, Vermont, Washington, West Virginia, Canada and Puerto Rico.

Maryland makes the comment that "we discourage such practices."

Minnesota says that these products must be registered. And Oklahoma says that it permits buyers mixtures, providing they are properly labeled and registered.

**Q.—If you have a fertilizer law and a pesticide law, do you require that these mixtures comply with provisions of both laws?**

The largest majority indicated that all such mixtures must comply with both laws. The only states that said that no requirement is in effect within their borders are Montana, North Carolina and Ohio.

Florida says, "yes, except for registration under pesticide law."

### Minnesota Plant Starts Making Liquid Plant Food

SPRINGFIELD, MINN.—The first plant in Minnesota to convert anhydrous ammonia to aqua ammonia for use either in mixing with other materials or for direct application, is now in operation here. Two brothers, Walter C. and Arthur Bielen are primary owners.

The plant is now producing complete liquid fertilizers in a variety of analyses and distributes its output within a 50-60 mile radius of Springfield. Production is 15 tons of complete liquid fertilizers an hour. The plant was purchased from and installed by Fabricated Metals, San Leandro, Calif.



Robert W. Hardcopf

**SPENCER APPOINTMENT**—Spencer Chemical Co. has announced the employment of Robert W. Hardcopf as a junior market analyst in its agricultural chemicals market research department. Mr. Hardcopf will fill a vacancy on the staff created when researcher Robert Farrow became the Ohio agricultural sales representative for Spencer. A native of Luverne, Iowa, Mr. Hardcopf received a bachelor's degree in forestry from Iowa State College in 1951. He is currently completing work on a master's degree in agricultural economics at Iowa State. From 1951 until 1953 he served as a lieutenant in the air force.

### Influence of Weather in Pest Outbreak Studied

The influence of weather in determining possible infestations of various insect pests has long been recognized as an important factor. According to Dr. J. A. Adams, Cornell University entomologist, who has been making a study of the subject, weather is being used to forecast specifically the possible outbreaks of at least two major insect pests of sweet corn. These are the corn flea beetle, carrier of Stewart's bacterial wilt, and the corn earworm.

How this is done, and how effective it may be, is described by Dr. Adams in the current issue of the station's quarterly magazine, "Farm Research." His studies have been made in the Hudson Valley where sweet corn for the fresh vegetable market is assuming increasing importance.

In commenting on the usual application methods, Dr. Adams observes that "unguided efforts by growers to apply control measures for insect pests are often 'too little and too late,' or too early and needlessly intensive."

Notably successful during the past three years have been predictions regarding the prevalence of corn flea beetles in the Hudson Valley. The total of the average temperatures for December, January and February is the deciding factor, it is explained. If this figure is 90 or more, a sufficient number of flea beetles may survive to cause serious outbreaks of wilt, and growers are alerted to necessary control measures. Thus, he says, records for the winter of 1955-56 indicate that little or no spraying for corn flea beetle will be necessary this year.

Possible serious invasions of the corn earworm into Hudson Valley fields can be predicted fairly accurately by observing summer temperatures, he adds. "If these run much above normal, the life stages of the earworm may be speeded up to the point where it becomes a serious pest in the Valley. Trapping earworm moths also aids materially in making reliable predictions.

"When properly developed, forecasting and guidance can better enable the grower to save his crop, when infestations are heavy and save his money when infestations are light," Dr. Adams concludes.

### NAC Annual Meeting Scheduled for Sept. 5-7 At Spring Lake, N.J.

WASHINGTON—The National Agricultural Chemicals Assn. will hold its 23rd annual meeting in the Essex and Sussex, Spring Lake, N.J., Sept. 5-7, L. S. Hitchner, NAC executive secretary, has announced.

Dr. Alfred Weed, John Powell & Co., division of Olin Mathieson Chemical Corp., Baltimore, will be chairman of the program committee for the meeting, Mr. Hitchner said.

### Hercules Experiment Setup Becomes "Research Center"

WILMINGTON, DEL.—The research laboratories of Hercules Powder Co. have recently completed twenty-five years of operation, the company has announced. Because of a broadening scope of its activities, the facility is now called the "Hercules Research Center," which company officials state portrays more accurately the nature and breadth of the research program.

Located seven miles west of Wilmington, the research center presently employs approximately 750 persons, under the direction of Dr. Peter Van Wyck. Most of the staff are specialists and technicians, and almost 300 of them professional scientists and engineers. In 1931, there were 125 employees, most of whom were transferred from Hercules' laboratories at Kenvil, New Jersey, established in 1915.

The company's expenditures for research at the time of opening of the experiment station were about \$450,000 annually. At the present time, the rate is almost \$8,000,000 annually.

In 1953, the firm's agricultural chemicals laboratory was put into operation. Biologists and entomologists conduct laboratory and greenhouse research on new chemicals for agriculture, augmented by field testing on the Hercules farm property.

### COLORADO FIELD DAY

FORT COLLINS, COLO.—Fertilization will be among topics on the program at the Colorado A&M agronomy field day, set for Sept. 6 here.



**SAFETY AWARD**—Marlin G. Geiger, president of the Davison Chemical Co. Division of W. R. Grace & Co., shown at the left above accepting the award of honor of the National Safety Council from Dr. Lyle T. Lee, president of the Baltimore Safety Council and manager of industrial relations, Baltimore Division, Westinghouse Electric Corp. The award—Davison's fifth in six years—was won on a national basis. The presentation took place at a luncheon in the Malling House in Baltimore. To win the award, Davison in 1955 scored a 51% reduction in frequency of accidents and a 77% reduction in severity of accidents from "per" rates established by the National Safety Council. A. B. Pettit, Davison's director of industrial health and safety, presided at the luncheon.

### Control Officials To Meet in Washington

WASHINGTON—The annual meeting of the Association of America Fertilizer Control Officials will be held Oct. 18-19 at the Shoreham Hotel here, according to an announcement by B. D. Cloaninger, Clemson Agricultural College, secretary-treasurer. Sessions are scheduled at 8 p.m. Oct. 18 and from 9 a.m. to 4 p.m. Oct. 19.

### Florida Consumption

TALLAHASSEE, FLA.—Florida fertilizer consumptions during April totaled 124,207 tons, according to the Florida Department of Agriculture. This included 74,083 tons of mixed goods and 50,124 tons of materials.



**INSERT RESEARCH PROJECT**—A basic research project in insect taxonomy has started under the joint sponsorship of the University of Michigan and the Dow Chemical Co., Dr. R. H. Boundy, Dow vice president and director of research, has announced. Robert R. Dreisbach, left, above, Dow consultant, and Dr. Henry Townes are key figures in the project. Dr. Townes is project director. The university has provided laboratory space and general facilities for the project in its Museum of Zoology at Ann Arbor, Mich., and Dow is providing funds for this research. The project is specifically designed for the preparation of taxonomic monographs on U.S. parasitic wasps. Dr. Townes' initial work is on the family Ichneumonidae which includes about 7,500 species, of which about two thirds are still unnamed. To make the best progress possible, cooperation with research workers in other institutions will be freely sought and freely given, Dr. Townes said.

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## U.S. Department of Agriculture Workers Get Awards for Outstanding Achievement

WASHINGTON—The U.S. Department of Agriculture June 5 presented distinguished service awards to seven of its employees for outstanding achievements in research and improved administrations.

The awards went to:

Dr. Lyle T. Alexander, soil scientist, Soil Conservation Service, Beltsville, "for successfully using soil science and related sciences to advance man's understanding of soil formulation, behavior and use and of the effects of radioactive materials on soils and plants."

Dr. M. R. Clarkson, deputy administrator, Agricultural Research Service, Washington, for work on animal diseases.

Elwood L. Demmon, forester, Forest Service, Asheville, N.C., for work on forest research.

Clarence M. Ferguson, administrator, Federal Extension Service, Washington, "for strengthening cooperative extension relations with land-grant colleges and promoting effective agricultural programs and extension work with farm people."

James B. Hasselman, director of Information Division, Commodity Stabilization Service, Washington, for work with information techniques.

Sylvester R. Smith, director, Fruit and Vegetable Division, Agricultural Marketing Service, Washington, for work with fruit and vegetable programs.

Dr. Percy A. Wells, chief, Eastern Utilization Research Branch, Agricultural Research Service, Wyndmoor, Pa., for research leading to new uses for many farm products.

USDA also presented superior service awards to 134 employees. Included in this group were:

H. L. Blaisdell, Agricultural Research Service, Greenfield, Mass., "for exceptional contributions in the field of forest insect pest control through leadership in the development and direction of effective procedures for controlling the gypsy moth."

Walter J. Buckhorn, Forest Service, Portland, Ore., "for vision and leadership in pioneering and developing forest insect aerial surveys in the states of Oregon and Washington."

Edith Katherine Cash, Agricultural Research Service, Beltsville, "for establishing and developing a worldwide index to fungus names used internationally as a basis for nomenclatural decisions; and for research on fungi important to agriculture."

Joseph N. Crisler, Agricultural Research Service, Matamoros, Tamps., Mex., "for his success in securing cooperation of Mexican authorities in suppression of pink bollworm infestation in northeastern Mexico to protect the United States cotton crop from that insect."

Ferdinand F. Dicke, Agricultural Research Service, Ankeny, Iowa, "for planning and conducting research contributing to the development of insect resistance in corn now being used in the corn improvement program."

Arthur Gieser, Agricultural Research Service, Beltsville, "for unusual diligence and effectiveness in improving safety and performance of aerial spraying, thus contributing to the protection and management of our mountainous forests and ranges."

Irving Granek, Agricultural Research Service, Hicksville, N.Y., "for contribution to the science of nematology by discovering a method of distinguishing the golden nematode from the tobacco cyst nematode, thus alleviating a complicated and costly regulatory problem."

Valdemar A. Johnson, Agricultural Research Service, White Horse, N.J., "for securing public compliance with quarantine requirements; and

for developing safe, effective control techniques and low-cost methods of quarantine certification in the federal-state Japanese beetle regulatory control program."

Laurence S. Jones, Agricultural Research Service, Riverside, Cal., "for research that has shown that the destructive mosaic virus disease of peach is transmitted by a microscopic mite which will facilitate development of practical control measures."

Annie L. Lohr, Agricultural Research Service, Washington, D.C., "for planting and preparing a book, 'Plant Diseases in Color,' illustrating the symptomatology of plant diseases, for use as an in-service training tool for plant quarantine inspectors."

Dr. Ruric C. Roark, Agricultural Research Service, Beltsville, "for inspirational leadership and meritorious service to agriculture in developing

and improving the use of chemical control methods for insect pests."

Norton S. Wilson, Agricultural Research Service, "for research that has shown that the destructive mosaic virus disease of peach is transmitted by a microscopic mite which will facilitate development of practical control methods."

### Heads Entomology Bureau

TRENTON, N.J.—William M. Boyd has been promoted to the post of chief of the Bureau of Entomology, New Jersey State Agriculture Department. He succeeds Frank A. Soraci, who recently was named director of the Division of Plant Industry.

### Enters Field

RACINE, WIS.—S. C. Johnson & Son here, a firm that has produced waxes for 70 years, has entered the insecticide field with Raid, a line of house and garden moth, insect, roach and ant sprays.

### Motomco, Inc., Moves Into New Plant in New Jersey

CLARK, N.J.—Motomco, Inc., manufacturer of Pival and Pivalyn rodenticides and Metazene space deodorant has moved into a new building housing plant and offices on Terminal Ave., Clark, N.J.

Located approximately sixteen miles from downtown New York City, the new building, which was under construction for over six months, provides new and enlarged office space as well as complete manufacturing and laboratory facilities.

### North Carolina Sales

RALEIGH, N.C.—North Carolina fertilizer sales during April totaled 418,843 tons, a decline from 451,785 tons in April, 1955. Sales for the first 10 months (July-April) of this fiscal year totaled 1,325,922 tons, down from 1,541,752 tons in the corresponding period a year earlier.



PHOTO COURTESY WESTERN GROWERS ASSN.

## Best of the crop Since 1917

## TRONA® POTASH for Agriculture

In 1917 state fairs were awarding prizes for outstanding farm products just as they are today. Then as now, growers depended on Trona® MURIATE OF POTASH for high quality crops. For it was in 1917 that Trona, first to produce domestic Potash when World War I pinched-off foreign sources, shipped the first trainload to the east coast. For the next twenty years Trona was the only domestic source of Potash and today, in spite of AMERICAN POTASH AND CHEMICAL CORPORATION'S broad diversification program, is still one of the primary basic suppliers of high grade Muriate and Sulphate of Potash for Agriculture.

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# Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

## Dealer's Responsibility Outlined in Court Case

If a dealer's customers should be injured through use of an insecticide purchased at the former's place of business, is the dealer liable?

This question came up recently in a Kentucky community where a \$25,000 suit was brought against two Louisville farm chemical stores for alleged injury to a 12-year-old girl who had suffered temporary paralysis of her feet after being exposed to a powdered insecticide spread around a family picnic area.

After listening to testimony for a couple of days, Judge Roy M. Shelbourne directed that the suit be dismissed, because the product sold by the defendants had been properly marked "poison" and the labels and instructions were in accordance with all Federal laws.

## AFTER 47 YEARS' SERVICE ...

## Dr. E. N. Cory, Entomologist, Retires Soon

Come Aug. 13, 1956, Dr. Ernest Neal Cory, head of the Department of Entomology, University of Maryland, state entomologist for Maryland, and assistant director of the Agricultural Extension Service at College Park, will retire after 47 brilliant years on the Old Line campus. He will be 70 years old.

Few men in America can match the remarkable career of Dr. Cory—scholar, administrator, beloved Southern gentleman. One of the most attractive and popular men on the Maryland campus for almost a half-century, Dr. Cory has combined a keen scientific mind with a love of people to form a new type of teaching technique for college students and farmers alike. With it he has fired the imagination of thousands of young men and women and created in them an eager thirst for scientific knowledge. It has enabled him to conduct scores of successful insect control crusades among farmers, fruit growers, and gardeners in his beloved State.

"I use the cafeteria style of teaching," he once said to us. "I lay before my students and our farmers the best information on insects—their way of life and means of their destruction—that my staff can assemble. We attempt always to present the material attractively—orally or written. Then we put great emphasis on inspiring them to pick up what is best for each. We are rarely disappointed with the results."

He has always said of his graduate students, "I strive to make men as well as entomologists; to develop character and personality along with scientific attainment."

The results of research in entomology which Dr. Cory has directed for more than a generation have been the foundation of the insect control program upon which much of Maryland's highly specialized agriculture is built today. His work on diseases and parasites of the Japanese beetle has brought him international renown, and helped to relegate this pest to a position of secondary importance in many parts of Maryland. His innovations in spray calendars for tree fruits have been imitated all over the world.

His proximity to Washington and his close liaison with the U.S. Department of Agriculture scientists have enabled Dr. Cory to establish many "firsts" in demonstrating new pest control practices under practical field conditions. He is a recognized authority on regulatory entomology.

Diligent in his desire always to improve professional entomology, Dr. Cory has given generously of his time and talent to the several entomological societies and related groups. He served as president of the American Association of Economic Entomologists, 1947-48, and secretary-treasurer, 1937-47; president, Entomological Society of Washington, 1942; president, National Shade Tree Conference, 1941; secretary-treasurer and business manager, "Journal of Economic Entomology," 1948-52. He is a member of Phi Kappa Phi, Sigma Xi, Kappa Alpha, and Omicron Delta Kappa fraternities, and the Cosmos Club of Washington.

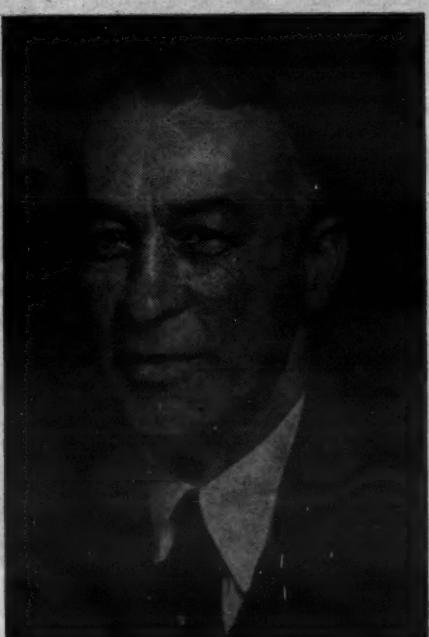
Dr. Cory is author of more than 200 scientific articles and bulletins on economic entomology. An accomplished artist, his water colors adorn the homes and offices of friends everywhere. Hobbies, other than water color sketching, include orchid growing, gardening, azalea culture and fishing.

Born at Alden, New York, Dr. Cory graduated from the old Maryland Agricultural College in 1909 and received the M.Sc. degree there in 1913. His Ph.D. is from the American University, 1926. He married Elizabeth Colton Elder, in 1911, and the couple have three children—Ernest Neal, Jr., William Robert, and Jean Marie.

While the pesticide trade has every sympathy for people who may suffer harm from the misuse of its products, still, there must be a limit to the responsibility carried by merchants who deal in pesticides of all kinds. Federal and state laws are very strict and explicit when it comes to labeling these toxic materials, and the industry from manufacturer to dealer makes every effort to warn and instruct users about carelessness.

We are glad to note that Judge Shelbourne was able to regard this particular case objectively and to realize that dealers can hardly supervise the final application and use of the materials they sell.

The labels and other literature accompanying pesticide packages tell the story very well. But it still behooves the dealer to warn buyers against carelessness in storing or using such materials.



Dr. E. N. Cory



## Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

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EXECUTIVE AND EDITORIAL OFFICES — 2501 Wayzata Blvd., Minneapolis, Minn. Tel. Federal 2-0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by

THE MILLER PUBLISHING CO.  
2501 Wayzata Blvd., Minneapolis, Minn.

(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)  
Associated Publications — THE NORTHWESTERN MILLER, THE AMERICAN BAKER, FEEDSTUFFS, MILLING PRODUCTION

# MEETING MEMOS

June 20-22—Northeast Branch, American Society of Agronomy, Summer Meeting, University of Maryland, College Park, Md.

June 26-28, Pacific Branch, Entomological Society of America, Hotel Claremont, Berkeley, Cal.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., secretary-treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

June 30—Del-Mar-Va Peninsula Fertilizer Assn., 35th Annual Convention, Hotel George Washington, Ocean City, Md., F. N. Strudwick, P.O. Box 199, Salisbury, Md., Secretary.

July 12—South Carolina Fertilizer Meeting, Tour of Edisto Experiment Station, Blackville, S.C.

July 19-20—Southwestern Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 25-27—Northwest Association of Horticulturists, Entomologists and Plant Pathologists Conference, Northwest Washington Experiment Station, Mount Vernon, Wash.

Aug. 1—Kentucky Fertilizer Conference, Guignol Theatre, University of Kentucky, Lexington, Ky.

Aug. 2-3—Nitrogen Field Day and Equipment Demonstration, Ohio State University, Columbus, Ohio.

Aug. 14-15—Ohio Pesticide Institute, Summer Meeting, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Wooster, Ohio, Secretary.

Aug. 17-25—Tenth International Congress of Entomology, McGill University and University of Montreal, Montreal, Canada, J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ontario, Canada, Congress Secretary.

Aug. 22-24—Beltwide Cotton Mechanization Conference, Atlanta Biltmore, Atlanta, Ga., sponsored by National Cotton Council.

Aug. 30—South Carolina Plant Food Educational Society, Clemson House, Clemson, S.C.

Sept. 5-7—National Agricultural Chemicals Assn., 23rd Annual Meeting, Essex and Sussex, Spring Lake, N.J., L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

Oct. 15—Fifth Annual Chemical Sales Clinic, Hotel Commodore, New York, Sponsored by the Salesmen's Association of the American Chemical Industry.

Oct. 15—Fifth Annual Chemical Sales Clinic, the Salesmen's Association of the American Chemical Industry; Hotel Commodore, New York City; chairman, Preston F. Tinsley, Westvaco Chlor-Alkali Division, Food Machinery and Chemical Corp., 161 East 42nd St., New York 17, N.Y.

Oct. 16-17—National Nitrogen Solutions Assn., Annual Meeting and Trade Show, City Auditorium, Sioux City, Iowa; John White, Auburn, Neb., secretary.

Oct. 18-19—Association of American Fertilizer Control Officials, Shoreham Hotel, Washington, D.C., B. D. Cloaninger, Clemson Agricultural College, Clemson, S.C., secretary-treasurer.

Oct. 23-24—Pacific Northwest Garden Supply Trade Show, Shrine Auditorium, Portland, Ore.

Nov. 2—Joint Agronomy-Industry Work Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Nov. 7-9—Agricultural Ammonia Institute, Annual Convention, Atlanta Biltmore Hotel, Atlanta, Ga., Jack F. Criswell, Claridge Hotel, Memphis, executive vice president.

Nov. 11-13—California Fertilizer Assn., 33rd annual convention, Del Coronado Hotel, Coronado, Cal.; Sidney H. Bierly, executive secretary, 475 Huntington Drive, San Marino 9, Cal.

Nov. 19-20—Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., secretary.

Nov. 28—Oklahoma Fertilizer Dealers Conference, Sponsored by the Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater.

Nov. 29—Oklahoma Soils and Crops Conference, Oklahoma A&M College, Stillwater.

Dec. 27-31—Entomological Society of America, Annual Meeting, Hotel New Yorker, New York City.

## Shea Chemical Corp. Announces Five Executive Promotions

JEFFERSONVILLE, IND.—Five personnel promotions have been announced by Vincent H. Shea, president, Shea Chemical Corp. Newest of the nation's phosphorus producers, the Shea firm is now undergoing major expansion programs in Tennessee and Texas.

The promotions are as follows: E. P. Madsen from vice president and controller to senior vice president, James D. Hogan from assistant to the president to vice president, J. B. Sutliffe from director of industrial sales to vice president, G. C. Taylor from assistant controller to controller, and Vincent H. Shea, Jr., from sales coordinator and plant purchasing officer, Columbia, Tenn., to general purchasing officer.

Mr. Madsen, who assumes the senior post at the firm's executive offices in Jeffersonville, has served as vice president and controller since 1954. He joined the firm in 1952 as controller. Prior to joining Shea, Mr. Madsen served as manager for Arthur Anderson & Co. at Chicago and Minneapolis. He graduated from the University of North Dakota in 1940.

Mr. Hogan became assistant to the president last summer, following his move to Jeffersonville. He served as office manager for the firm's Columbia, Tenn., plant, from late in 1951. Previous experience includes employment with the Hoosac Valley Line Co. and in the chemical department, General Electric Co. He has B.A. and B.S. degrees from Boston College, and is a graduate of General Electric's advanced management course.

Mr. Sutliffe has directed the firm's industrial sales program since joining Shea in January, 1955. As vice president, he will continue this function and will head the company's New York offices. Prior to his affiliation, Mr. Sutliffe was employed in various executive positions by the general chemical division, Allied Chemical & Dye Corp., 1937-55. He has a B.S. degree from Wooster Polytechnic Institute.

Mr. Taylor joined Shea in 1953 as chief plant accountant at the Columbia plant. In January, 1956, he transferred to Jeffersonville as assistant controller. Prior to 1953, Mr. Taylor was employed by the United States Gypsum Co., Price-Waterhouse, New York City, and was secretary and treasurer, Packard Junior College, New York City.

Mr. Shea, Jr., also located at Jef-

ersonville, assumes charge of a newly-created post as general purchasing officer for the firm. Since 1953 he has been sales coordinator and purchasing officer at the Tennessee plant. During 1952-53, he was in charge of shipping, and during the Tennessee plant construction period in 1951-52, he acted as receiving officer on the construction staff. Following service in the Navy in 1946-48, Mr. Shea studied business administration in Boston, and attended Boston University.

## John Jungkind in New Cotton Council Post

M E M P H I S.—John Jungkind, a member of the National Cotton Council's public relations staff in Memphis since 1953, has been appointed Washington public relations representative of the Council, effective June 1.

His appointment was one of several within the public relations and sales promotional staffs announced by the Council. Emmett Robinson has been assigned to the office of public relations, filling the vacancy created by Mr. Jungkind.

Fisher A. Rhymes, who has been in the industrial products section of the sales promotion division in Memphis, has been transferred to the Council's New York office.

Bill Nunn will be a member of the foreign trade division, with headquarters in Memphis. Appointment of Leslie A. Rogers to the sales promotion staff in Memphis also was announced.

## SELLS BUSINESS

FOLEY, MINN.—Don Wildman has sold the feed, seed and fertilizer portion of his Wildman Farm Supply business to Gordon Rothfork of Wisconsin. Mr. Wildman will continue in the dairy equipment and outboard motor business.

## INDEX OF ADVERTISERS

CROPLIFE, June 11, 1956—27

### WYOMING LEAFLETS

LARAMIE, WYO.—The University of Wyoming has published a series of new extension leaflets on commercial fertilizers for five Wyoming crops. Written by C. E. Allen, extension agronomist, and Paul C. Singleton, soils researcher, four leaflets are: "Commercial Fertilizers on Irrigated Pastures," L-26; "Commercial Fertilizer on Alfalfa," L-27; "Commercial Fertilizers on Cereal Crops," L-28; "Commercial Fertilizers on Sugar Beets," L-29. A fifth leaflet, by William A. Riedl, research agronomist, L. I. Painter, soils researcher, and Mr. Allen, is "Commercial Fertilizers on Potatoes," L-25.

## Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care of this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch. All Want Ads cash with order.

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American Potash & Chemical Corp. ....	Krause Plow Corp. ....
Anco Manufacturing & Supply Co. ....	Kraft Bag Corp. ....
Armour Fertilizer Works .....	Lion Oil Co., Div. Monsanto Chem. Co. ....
Ashcraft-Wilkinson Co. ....	The Mackwin Co. ....
Atkins, Kroll & Co. ....	Meredith Publishing Co. ....
Barnard & Leas Mfg. Co. ....	Minerals & Chemical Corp. of America ..
Baughman Manufacturing Co., Inc. ....	Mississippi River Chemical Co. ....
Beard, J. B., Co. ....	Monsanto Chemical Co. ....
Bemis Bro. Bag Co. ....	National Potash Co. ....
Bennett Industries, Inc. ....	Naugatuck Chemical Div., U. S. ....
Blue, John, Co. ....	Rubber Co. ....
Bonneville, Ltd. ....	New York Hanseatic Corp. ....
Bradley & Baker .....	Nitrogen Div., Allied Chemical & Dye Corporation .....
Brea Chemicals .....	Olin Mathieson Chemical Corp. ....
Bryohill Company .....	Ozark-Mahoning Co. ....
Burrows Equipment Co. ....	Pacific Coast Borax Co. ....
Butler Manufacturing Co. ....	Pennsylvania Salt Mfg. Co. of Washington
California Spray-Chemical Corp. ....	Pfizer, Chas., & Co., Inc. ....
Chase Bag Co. ....	Phillips Chemical Co. ....
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College Science Publ. ....	Potash Company of America ..
Commercial Solvents Corp. ....	Poulsen Company ....
Davison Chemical Co. ....	Powell, John, & Co., Inc. ....
Deere & Co., Grand River Chem. Div. ....	Private Brands, Inc. ....
Dempster Mfg. Co. ....	Rieke Metal Products Corp. ....
Diamond Black Leaf Co. ....	Riverdale Chemical Co. ....
Doherty Weed Control .....	Shell Chemical Corp. ....
Douglas Chemical Co. ....	Simonsen Mfg. Co. ....
Dow Chemical Company .....	Sinclair Chemicals, Inc. ....
E. I. du Pont de Nemours & Co., Inc....	Smith-Rowland Co., Inc. ....
Eastern States Chem. Co. ....	Sohio Chemical Co. ....
Fairfield Chemical Division, Food Machinery and Chemical Corp. ....	Spencer Chemical Co. ....
Fischbein, Dave, Co. ....	Stauffer Chemical Co. ....
Fertilizer Engineering & Equipment Co. ....	Stewart-Warner Corp. ....
Flint Steel Corporation .....	Successful Farming .....
Floridian Company .....	Tennessee Corp. ....
Frontier Chemical Co. ....	Thomas Alabama Kaolin Co., The .....
Gandrud, E. S., Co. ....	Tryco Mfg. Co. ....
Grace Chemical Co. ....	Union Bag and Paper Corp. ....
Grand River Chemical Div., Deere & Co....	U. S. Phosphoric Products Division .....
Hahn, Inc. ....	U. S. Potash Co. ....
Henderson Mfg. Co. ....	U. S. Rubber Co., Naugatuck Chem. Div. ....
Hercules Powder Co. ....	U. S. Steel Corp. ....
Hough, Frank H., Co. ....	Velsicol Chemical Corp. ....
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